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October 1, 2012

Mr. Paul Coble, Chairman
Mr. Phil Matthews, Vice Chair
Wake County Board of Commissioners
P.O. Box 550
Raleigh, North Carolina 27602

Dear Chairman Coble and Vice-Chairman Matthews:

Your letter of August 6 posed 28 questions regarding the Wake County Transit Plan. Attached to this letter are answers to those questions. As I indicated in my August 17 letter, these answers are the product of collaboration among the parties that created the plan: Wake County , the Capital Area MPO, and Triangle Transit. In the event that these responses lead to follow-up questions, please let us know and we will respond accordingly. We intend to publish these answers on our web site (www.triangletransit.org) late this week.

You will note that some questions cannot be fully answered at this time. The process of planning and executing a plan of this scope is complex and has many moving parts. Questions about the requirements of freight railroad companies, for example, are typically addressed at a later stage of project development. As you know, we are in the fortunate position in North Carolina of having a state-owned company in a position of influence in a critical rail corridor. In fact, we expect that the provision of commuter rail services will be the product of a partnership which involves the North Carolina Railroad Company.

Thank you for this opportunity to address your questions on the Wake County Transit Plan. The anticipated growth of Wake County and the region compel us to act or suffer serious deterioration in our quality of life and economic competitiveness. We look forward to a continuing dialogue on the Plan as we prepare for Wake County citizens to have their say through a referendum.

Sincerely,

David D. King
General Manager

cc: Commissioner Joe Bryan
Commissioner Tony Gurley
Commissioner Ervin Portman
Commissioner Betty Lou Ward
Commissioner James West
Mr. David Cooke
Mr. Ed Johnson
Mr. Fred Day

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Answers to the August 6, 2012
Wake County Board of Commissioners
Questions Regarding Transit
October 1, 2012

1a) What is the cost for continuing the current transit service levels?

ANSWER: In Fiscal Year 2010, the most recent year available through the National Transit Database, current service providers in Wake County (CAT, C-Tran, Triangle Transit, & NCSU Wolfline) reported operating expenditures of more than $46.6 million dollars and capital expenditures of $11.3 million. A portion of Triangle Transit expenditures occur in Durham and Orange Counties. Existing bus services are projected to cost up to $2.3 billion from FY 2013 to FY 2040. The updated draft Transit Plan includes these figures. In addition, staff has used the following table to describe current service levels.

Table 1.1

Current Transit Services – FY 2010 Service Provider Profile*

Transit Provider	Routes			Revenue Hours	One-way Trips	Operating Costs	Capital Costs
	Weekdays	Saturdays	Sundays				
CAT	30	26	18	213,316	5,236,722	$ 24.43 m	$ 7.21 m
C-Tran**	6	6	0	30,561	142,321	$ 3.59 m	---
Triangle Transit	13	2	0	102,882	1,091,626	$ 13.86 m	$ 4.00 m
Subtotal	**49**	**34**	**18**	**346,759**	**6,470,669**	**$ 41.88 m**	**$ 11.21 m**
NCSU Wolfline	13	3	3	57,410	2,260,277	$ 4.52 m	$ 0.06 m
Total	**62**	**37**	**21**	**404,169**	**8,730,946**	**$ 46.40 m**	**$ 11.27 m**

* National Transit Database; 2010 is the latest published data

** C-Tran contracts service operations through a private vendor. Vehicle capital costs are included in the service contract are included in operating costs.

The projected cost assumes all current services and delivery methods continue as is, vehicles are routinely replaced, and inflation rates are consistent with those used elsewhere in the transit financial model. To fund the future expenditures, the model assumes that: 1) existing federal and state funding programs continue, 2) average fares and other revenues increase over time keeping pace with inflation, and 3) municipal transfers from other funds (i.e. property taxes and existing vehicle registration revenues) provide the remaining balance.

For more information on existing transit services, please refer to Appendix L of the revised draft Wake County Transit Plan, dated September 25, 2012.

1b) What are the current Federal and State subsidies for the current system?

ANSWER: Federal and state support for local transit services come from a number of funding programs. For operating, federal sources include federal grants based on population and service performance measures. Based on information provided in the FY 2010 National Transit Database, for every one dollar expended to operate transit services:

- 51 cents was provided by local governments,
- 14 cents provided by passengers,
- 15 cents through the federal government,
- 12 by the state government, and
- 8 cents through other revenues (i.e. advertising, contracted services).

For capital, federal and state support is allocated to specific projects through grant awards. For example, in FY 2010 the City of Raleigh received significant federal funding for the Poole Road Maintenance Facility. In that year, for every one dollar expended on transit capital by service providers in Wake County, 89 cents was provided by the federal government, four cents by the state government, and seven cents by local governments. A year earlier (FY 2009), Triangle Transit received a major federal grant to replace buses. During FY 2009, for every one dollar expended on transit capital by service providers in Wake County, 66 cents was provided by the federal government, 12 cents by the state government, and 22 cents by local governments.

Since FY 2001, the average level of federal and state funding support for City of Raleigh transit projects has been 80% while Triangle Transit has averaged 88.8% (see table 1.2). In order to be on the conservative side, the Wake County Transit Plan assumes that federal and state funding will continue into the future at 75%. This funding level is slightly less than what current service providers experienced in recent years.

Table 1.2

Current Transit Services – Capital Revenue Sources

	CAT	C-Tran*	Triangle Transit	Expanded Services
Prior Year Funding Sources – 10 year Avg**				
Non-Local (FY01-10)	80.0%	Na	88.8%	---
Local (FY01-10)	20.0%	Na	11.2%	---
Total	100.0%	Na	100.0%	---
Projected Funding Sources				
Non-Local (FY01-10)	75.0%	Na	75.0%	75.0%
Local (FY01-10)	25.0%	Na	25.0%	25.0%
Total	100.0%	Na	100.0%	100.0%

* C-Tran contracts service operations through a private vendor. Vehicle capital costs are included in the service contract are included in operating costs.

** National Transit Database; 2010 is the latest published data

For more information on existing transit services, please refer to Appendix L of the revised draft Wake County Transit Plan, dated September 25, 2012.

1c) What percentage of Wake County residents use the existing system?

ANSWER: It is difficult to track the exact number of residents who use transit primarily because people use transit in unique and specialized ways. For example the latest Census statistics (2009) note that only 1% of commuters in Wake County use transit to get to work. However, since this question specifically asks the respondent to only answer the mode of travel used most frequently, the number would not include users who ride transit once or twice a week, users who use transit when schedules or travel allows, or users who use transit as a flexible parallel to carpooling or bicycling. It is important to note that the reasons listed for non-regular transit use apply to low-income users as well as "choice" riders who could use other modes if transit was not available. One of the stated goals of the Wake County Transit Plan is to increase transit service so that all residents would have more options to access employment, education and other activities.

Table 1.3 notes how Wake County's transit trips compare to the population and how this metric compares to other cities nationally. As the table suggests, current transit use in the County is relatively low.

Table 1.3
Population, Number of Unlinked Trips and Unlinked Trips per Capita by Urban Area

Urban Area	2010 Population	Unlinked Trips 2010	Unlinked Trips per Capita
Atlanta, GA	3,499,840	168,714,217	48.2
Charlotte, NC	923,944	24,116,615	26.1
Dallas-Fort Worth-Arlington, TX	4,145,659	73,615,600	17.8
Indianapolis, IN	1,218,919	8,449,880	6.9
Pittsburgh, PA	1,753,136	70,308,815	40.1
Virginia Beach, VA	1,394,439	18,907,492	13.6
Wake County, NC	900,993	8,749,139	9.7

The most recent Regional Transportation Alliance Poll in June 2012 found that 12% of Wake respondents noted that they use the bus system frequently or occasionally. Another 10% noted that they used the system on "special occasions", possibly referencing service to the State Fair, sporting events or the R-line. This is a slightly higher number than the responses in 2011 when 8% of Wake respondents noted that they used the bus system frequently or occasionally and 13.4% noted that they used the system on special occasions. The increased number of people stating they use transit may reflect increased trip demand overall on the transit network, where the Wake County transit providers have seen regular year over year growth(See Table 1.4).

Table 1.4

Certified* Number of "Unlinked Trips" from Local Transit Providers

Transit Provider	2008	2009	2010
CAT	4,567,679	5,394,201	5,643,624
C-Tran	124,574	147,846	185,138
Triangle Transit***	613,331	718,135	660,100**
Subtotal	**5,305,584**	**6,260,182**	**6,488,862**
NCSU Wolfline	1,868,791	2,058,520	2,260,277
Total	**7,176,383**	**8,320,711**	**8,749,139**

* Transit data is certified by the Federal Government prior to release of national data. 2011 data has been submitted but not certified or released.

** Triangle Transit primarily serves commuters riding to and from employment. Ridership numbers likely declined in 2010 as the local economy began feeling the impact of the national recession and employment declined. Triangle Transit's bus ridership has increased 44.6% since the end of FY 10. CAT and C-Tran also had notable increases during the same period.

*** In all years Triangle Transit's overall NTD reported numbers are adjusted to reflect only the ridership impacting Wake County.

The number of one-way (or unlinked trips) has increased steadily over the past few years as current service providers responded to service demand and increased revenue hours. Since FY 2001, the ten year average percent change in annual ridership has been 5.3% (compound rate) whereas the County's annual percent change in population was 3.7%. For more information on existing transit services, please refer to Appendix L of the revised draft Wake County Transit Plan, dated September 25, 2012.

1d) If the Plan estimates an annual expenditure of $54 million, how will that compare to current expenditures on roads and road maintenance?

ANSWER: Table 1.5 shows the actual investment on roads and road maintenance made in 2009. The past year of 2009 is used because these programs are active and this is the most current year where all the required data is available. Although 2009 is mid-recession the funding levels remained fairly constant with only a slight drop in local participation. 2009 is also very comparable to 2014 in the transit plan analysis since both years represent "standard" funding years without major investments.

Table 1.5
Governmental Spending by Category on Roadways in 2009

Spending Category	2009
NCDOT Maintenance	$ 24,501,000
NCDOT Construction	$ 70,461,000
Wake County Municipalities (Local Funds)	$ 88,811,000
Wake County Municipalities (Powel Bill)	$ 16,069,000
Total Allocated (2009)	$ 199,844,000

Table 1.6 shows the proposed investments that the Wake County Transit Plan would make in 2014. This includes the new monies proposed in the plan and the assumptions about what it would take to fund the existing services in 2014.

Table 1.6
Proposed Spending by Category on Transit in 2014

Spending Category	2014
Bus Operations	$ 53,908,000
Vehicle Purchases	$ 20,949,000
Other Capital Investment	$ 21,046,000
Commuter Rail Planning	$ 7,889,000
Total Allocated (2014)	$ 103,792,000

Table 1.7 shows what type of projects could be constructed if 54 Million dollars were added to the roadway program instead of the transit program.

Table 1.7
Roadway Projects that could be constructed with $54 Million

Project	Cost
1.5- 2 miles of typical new six lane urban freeway	$54 Million
5-6 miles of widened freeway (4>6 lanes)	$54 Million
4 new simple diamond interchanges	$54 Million
1 new complex directional interchange	$54 Million
4 miles of new four-lane median divided roadway	$54 Million
12 miles of new two-lane roadway	$54 Million
½ the cost of upgrading a major interchange (I-40, I-440, US 1, US 64)	$54 Million

Table 1.8 shows the estimated highway funds and percentage of the total generated locally by gas taxes and contributed by local sources (property taxes, bonds, developer fees and exactions, transportation fees) for 2009. . Note that for this year 27% of all of the funds collected ($72,545,000 of $288,458,000) were retained by the State and Federal government. Some of this money is returned to Wake County for regular non-roadway investments, including transit and more is returned when large projects are funded, however on the whole Wake County citizens contribute more than is reinvested in County projects.

Table 1.8
Taxes and Fees collected or passed through to Roadways in 2009

Revenue Source	2009	Percent of Total
Estimated Federal Gasoline Tax Paid in Wake County ($.1840 average per gallon)	$69,502,000	26%
Estimated North Carolina Gasoline Tax Paid in Wake County ($.3020 average per gallon)	$114,074,000	42%
Municipal Participation in Road Construction (North Carolina Office of the Treasurer)	$104,880,000	33%
Total Collected (2009)	$ 288,458,000	
Total Spending (2009)	$ 199,844,000	73%
Amount Retained by the Federal and State Governments	$ 72,545,000	27%

For comparison Table 1.9 shows the assumed transit funds and the percentage of the total generated locally. Note that 30% of the funds collected this year would be set aside in the Fund Balance to allow future projects. All of the sales tax and vehicle registration revenue is managed locally.

Table 1.9

Proposed Taxes and Fees to be collected or passed through to Transit in 2014

Revenue Source	**2014**	**Percent of Total**
1/2 Sales Tax	$56,745,000	38%
Vehicle Registration Fees		
Wake County Fee ($7)	$5,544,000	4%
Existing Regional Fee ($5)	$4,180,000	3%
Inflation Adjustment to Regional Fee ($3)	$2,376,000	2%
City Enacted Fees	$1,880,000	1%
Rental Car Fees		
Dedicated Wake County Portion (34%)	$2,938,000	2%
Portion Reserved for Regional Service (50%)	$3,450,000	2%
Other Local Funds		
Transfer from Raleigh/Cary General Fund	$18,472,000	12%
NC State Transportation Fee	$5,144,000	3%
Advertising and Other Special Programs	$4,240,000	3%
Fare Box	$6,826,000	5%
Outside Funding		
Federal Funds	$22,080,000	15%
State of North Carolina Funds	$14,560,000	10%
Total Collected (2014)	$ 148,435,000	
Total Spending (2014)	$ 103,792,000	70%
Amount Retained for Fund Balance	$ 44,643,000	30%

Lastly Table 1.10 provides a low end estimate of the vehicle purchase, maintenance and storage costs associated with roadway network. Although these costs are not directly borne by taxes and may represent an acceptable public-private partnership, these costs must be considered when making a true apples to apples comparison of roadways to transit since transit costs include each of these items. Low estimates on vehicle purchase and maintenance costs are used to separate the basic transportation need costs from the non-transportation benefits of vehicle ownership. The amount of commercial parking available is also intentionally under-represented since in many areas of the county no true alternatives exist (Many studies show the average number of commercial parking spaces for each registered vehicles to be higher than the 1.25 used). Parking construction costs estimates are equivalent to the costs used in the Transit Plan. As noted in the table these costs are additive to governmental investment in roadways. Currently the transit providers in the County are spending about 2% of this overall amount on transit and this number would only go up to 6% with the proposed plan.

Table 1.10
Estimated Non-Governmental Spending by Category on Roadway Supporting Vehicles and Infrastructure in 2009

Spending Category	2009
Estimated Gasoline Expenses (378 million gallons x $1.33 cost per gallon - EXCLUDING TAXES)	$ 501,279,000
Purchase, Maintenance, Insurance of Vehicles (730,000 vehicles x $2400 average annual costs)	$ 1,752,000,000
Annual Commercial Parking Costs (Estimated 912,500 spaces at $4,250 per space with 20 year life)	$ 193,906,000
Municipal Spending for Parking North Carolina Office of the Treasurer)	$ 19,034,000
Total Allocated Per Year	$ 2,466,219,000
Roadway Investment + Vehicle Costs Per Year	$ 2,666,063,000

2a) During this process how have we gathered input from the approximately 180,000 citizens who live inside the county and outside a municipality?

ANSWER: Triangle Transit implemented a multifaceted public involvement plan to notify and engage the public during the preliminary transit planning process, which was open to all 900,000 residents of Wake County.

Triangle Transit invited 40 transportation and public affairs specialists in the Triangle to assist us through a Public Involvement Steering Committee. The specialists included staffers from Wake County, Cary, Raleigh and CAMPO. The Committee assisted in reviewing primary messages about the transit studies and advised Triangle Transit and the consultant team on public involvement opportunities and resources. A 43-page Public Involvement Plan was developed that included profiles on each city, town and county in the study area, socioeconomic information, stakeholders, media and goals.

Public Workshops: Outreach included 19 public sessions between June 2010 and March 2011, 12 of which were in Wake County:

- Round One Wake County meetings explaining the transit planning process were held in Raleigh, Cary, Knightdale and Apex
- Round Two Wake County meetings to present and gather public input on the best performing transit corridors and conceptual alignments were held in Raleigh, Wake Forest, Morrisville and Garner
- Round Three Wake County meetings with detailed transit alternatives were held in Raleigh (3 sessions) and Cary

Of the 1,100 people at the 19 workshops region-wide, a total of 745 (67%) attended meetings in Wake County. A court reporter was available for those participants that wanted to leave verbal comments. Triangle Transit does not have a count of how many of these participants live in Wake County but outside a municipality.

Web site: A Web site was established at ourtransitfuture.com. The Web site contains information on the region's planning history, existing transit systems, transit technologies under study, detailed information on each corridor, maps, station descriptions, frequently asked questions, a glossary of transit terms, news clips and Google Translate which allows the material on each Web page to be translated into 40 different languages.

Through the three rounds of meetings:

- The Web site at ourtransitfuture.com had more than 1,294,478 page views
- Raleigh topped the list as the city with the most Web site viewers
- The second most downloaded file was the detailed map showing a potential Durham/Wake Commuter Rail route
- The third most downloaded file was the detailed map showing a potential Wake Light Rail route
- The top referring sites that linked to the project Web site (in order) were facebook.com, wral.com, raleighnc.gov, garnercitizen.com, newsobserver.com, indyweek.com, blogs.newsobserver.com, raleighpublicrecord.org and townofmorrisville.com

At the end of the two-year transit planning process, summaries of each round of public meetings were published online along with participant comments.

Between the years 2011 and 2012, Wake County and Triangle Transit made presentations to each municipality's board or council twice. The first presentation was geared to educate the elected officials and their citizens about what was proposed in the plan. The follow-up presentation was to provide an opportunity for feedback and propose changes. After hearing from all 12 municipalities, staff incorporated comments and released the draft plan to the general public on the Wake County Website http://www.wakegov.com/transportation/default.htm. Those remaining citizens who do not live inside a municipality had the option of attending and submitting feedback at any of the public presentations or by receiving the information and commenting on the plan via two websites – www.ourtransitfuture.com and www.wakegov.com.

Targeted Communication with Stakeholder Groups: Triangle Transit identified stakeholder groups including current transit users, seniors, African American and Latino communities that needed to know about the transit planning process. Phone calls and e-mails to the groups resulted in the distribution of 60 outreach kits containing materials from the workshops.

Other Outreach: In addition to the public workshops:

- News releases to local media, Spanish local media, bloggers and Web sites
- Videos explaining the planning process and goals of the project were produced by Triangle Transit and posted on the Web site and on YouTube
- Social media was established to promote and encourage involvement through Facebook, Twitter, YouTube and Flicker
- A project hotline for telephone calls was established (800-816-7817)
- A postal mail address for citizen comments was established (P.O. Box 530, Morrisville 27560)
- Interior bus notifications on CAT, C-Tran and Triangle Transit promoted each round of meetings, sites and times print media coverage in the N&O (including targeted ads and notifications in the Cary News, Southwest Wake News, Eastern Wake News, North Raleigh News) also The Carolinian, La Conexion, Que' Pasa; broadcast media (WRAL, WTVD, NBC 17, News 14 Carolina, WPTF-AM and FOXY 107)
- An e-mail box was established for the project (info@ourtransitfuture.com)
- Special efforts were made to encourage meeting attendance, including the handout of information cards at transit centers in Raleigh, Cary and RTP.

The public participation process coordinated with Wake County and CAMPO staff was directed to all of Wake County's residents, not just those living in municipalities.

2b) According to the Plan what specific service will these Wake County citizens receive and what are the costs they will pay?

ANSWER: The services offered to citizens are detailed in the Wake County Transit Plan. Those who live directly along bus routes and close to rail stations are likely to have the ability to walk to access the transit system. Others who live further away will likely use park-and-ride lots to connect to the system, as do many Wake County unincorporated area residents today.

If a Wake County resident uses a transit service, they will pay whatever the appropriate fare is for that service or perhaps use an employer-provided pass if they work for an employer who participates in such a program (GoPass) as a fringe benefit to workers.

If a resident pays vehicle registration fees or purchases goods subject to the half-cent sales tax, they will contribute towards the financial operations of the transit system in this way.

3) Please discuss the proposed governance structure for implementing the Plan. What role will the Wake County Commissioners play in future decisions concerning possible modifications and potential expansion of transit services?

ANSWER: The proposed governance structure for guiding implementation of the Transit Plan is currently under discussion. The following are key principles to defining the structure:

- That the Board of Commissioners maintains authority and oversight over ensuring implementation of the Transit Plan.
- That the Board of Commissioners has the authority to initiate repeal of the sales tax (countywide referendum) and repeal the new vehicle registration fees (this may require legislative clarification) in the event the transit plan is not being implemented consistent with the approved plan.
- That the Board of Commissioners approves all future updates and amendments to the Transit Plan.
- That all transit service providers report regularly on the status of implementing the Transit Plan.
- That the Transit Plan be reviewed on a regular basis.
- In accordance with State Legislation, the new transit funds shall not replace existing local funds spent on transit.
- That Triangle Transit provides the day to day operation and implementation of the Transit Plan in conjunction with other service providers (CAT, C-tran).
- That the municipal governments have a forum to monitor the Transit Plan and provide input on future amendments and updates.

For more information on the Governance Structure, please refer to the *Interlocal Agreements* section on page 67 of the revised draft Wake County Transit Plan, dated September 25, 2012.

4) Please describe in detail the Durham County financial model and the anticipated Orange County financial model.

ANSWER: The Durham and Orange county financial models were developed using software and financial planning principles similar to those used to create the Wake County model.

Major assumptions about funding for capital projects are the same in all three county plans: 50% federal, 25% state, and 25% local funding are the assumed investment shares of the light rail and commuter rail projects in all three county plans. The enhanced bus lanes on MLK Blvd in Chapel Hill are also assumed to have a 50/25/25 split as described above.

Also the same across all three plans are the standard unit costs used to generate cost estimates for rail projects and bus capital infrastructure. Where possible, county-specific variations in bus service costs have been used to project future operating costs.

To the extent that there are any services envisioned in the plans for Durham and Orange Counties that continue into Wake County, the portion of service in Durham or Orange County is fully funded using revenue from that county, and is not dependent on revenue from Wake County. Details for the assumptions and outcomes of the financial models in Durham and Orange County can best be explored by reviewing the plans adopted by the Durham Board of County Commissioners and Orange County Board of Commissioners. These two plans have a number of characteristics in common with the Wake County Plan including their emphasis on bus expansion in the early years and in the case of Durham County, a shared financial commitment in the Durham County plan to commuter rail connecting West Durham to Garner.

The primary difference among the three plans is the projected growth rates for sales tax. Most of the differences in the plans stem from varying assumptions by county finance staffs across the region. Wake County has chosen to use a more conservative approach to sales tax growth rates than Durham or Orange County. The future growth rate assumption for each particular county was determined based on guidance from each county manager, and was developed based on historic performance and the impact of the recent recession. As is the case for assumptions in each cost, revenue and demographic category, we believe our assumptions are conservative. For more information about the Durham and Orange County Plans please visit www.ourtransitfuture.com.

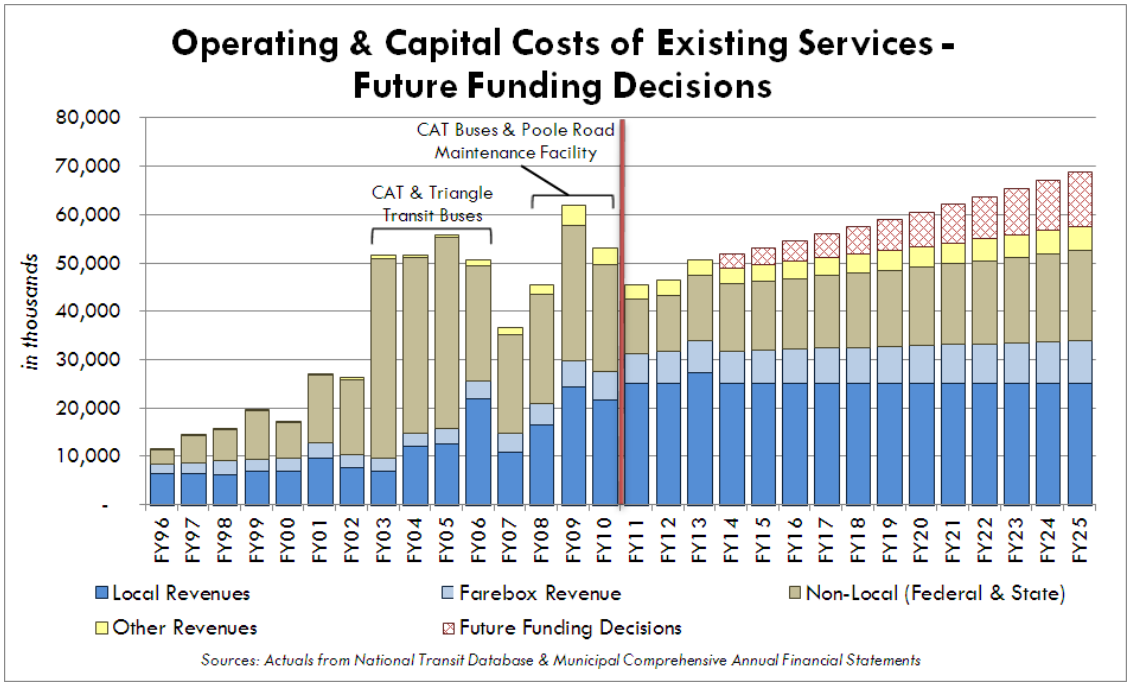
Note that the rail portions of Durham and Orange County's transit plan rely on federal capital funds, but neither of their plans makes the distinction between "Core" (can be achieved without federal funds) and the "Enhanced" (can be achieved only if we are successful in competing for federal and state funds) which is in the Wake County Transit Plan.

5) Please provide the City of Raleigh's current general fund dollar commitment to transit and what the Plan's model predicts it will be once the Plan is implemented. How will the Plan's model affect current Raleigh transit service?

ANSWER: Based on FY 2010 National Transit Database information, the City of Raleigh expended approximately $15.0 million dollars to support CAT operating and capital. In FY 2013, the City of Raleigh has a budgeted $16.6 million in local funds to support CAT's transit services. In accordance with North Carolina Session Law 2009-527 (House Bill 148), the Wake County Transit Plan assumes that the City of Raleigh will continue to fund existing services. Revenues available to local jurisdictions through the legislation, including the ½ cent sales tax, were intended to supplement rather than supplant existing sources.

As operating and capital costs continue to rise, existing service providers face a challenge. The total cost of existing services will outpace current dedicated revenue sources creating future funding decisions that may include increase local subsidies. The future decisions range from increasing revenues, fees, and/or local subsidies to controlling expenditures and implementing efficiency measures. The red hashed area at the top of each column beginning in FY 2014 in the following table represents the potential funding gap in future years for all current service providers (CAT, C-Tran, and Triangle Transit).

Chart 5.1



The issue will exist whether or not the Wake County Transit Plan is approved and implemented. Opportunities for existing service providers to control future costs are necessary and the Wake County Transit Plan is not intended to alleviate current service providers of this responsibility. Current service providers are continuously pursuing strategies to control costs and increase efficiencies that minimize future expenditures. For example, the City of Raleigh recently conducted a study ("*ADA Paratransit*

Service Alternatives Analysis for Accessible Raleigh Transportation") evaluating their $7.3 million paratransit program. The Accessible Raleigh Transportation (ART) analysis identified specific strategies to become financially sustainable while meeting an increasing service demand.

In the draft Wake County Transit Plan, a portion of the County's $7 vehicle registration fee is set aside to cover some inflationary costs for existing service providers as these agencies continue funding current services at the prior year levels. Also, the County $7 vehicle registration fee would be used to level the playing field between those municipalities that contract for additional transit services and those who do not. Table 5.2 summarizes the estimated amounts that each municipality (non-service providers) pays to existing transit service providers. The Wake County Transit Plan would replace local subsidies for municipalities other than Raleigh and Cary.

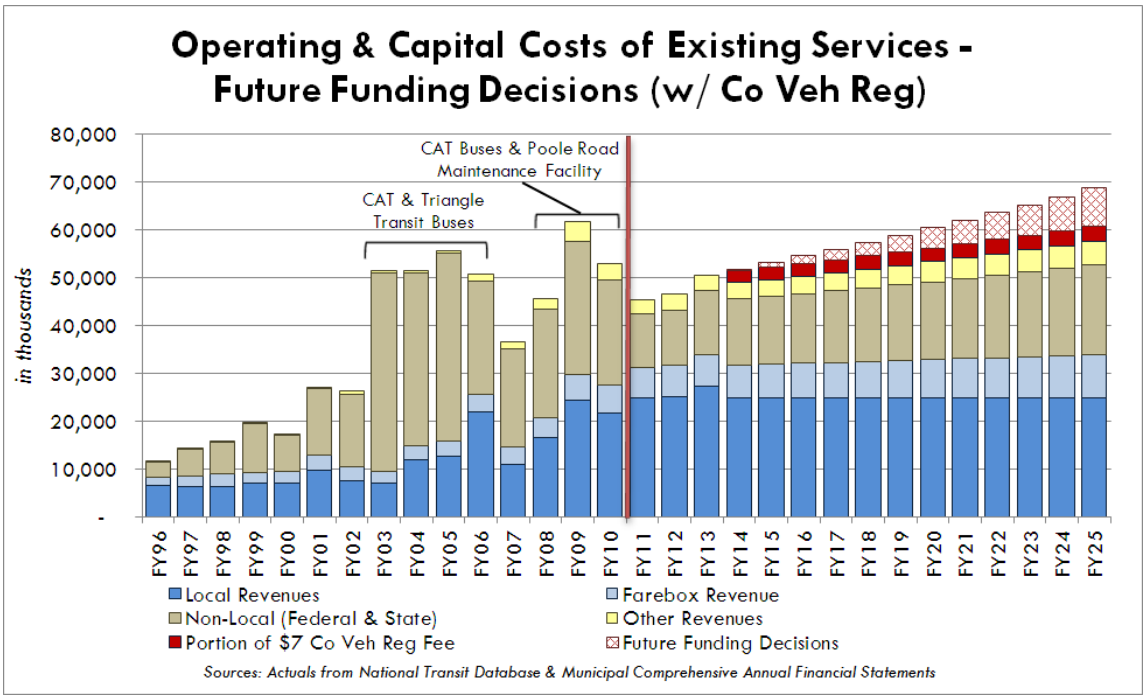
Table 5.2

Municipal Subsidies to Existing Service Providers for Additional Transit Services

Jurisdictions	***Local Subsidies***	***Service***
Apex	---	---
Fuquay-Varina	---	---
Garner	---	---
Holly Springs	---	---
Knightdale	$ 30,255	Knightdale Connection & Parking
Morrisville	---	---
Rolesville	---	---
Wake Forest	$ 150,000	Wake Forest Circulator
Wendell	$ 16,931	Wendell Connection
Zebulon	$ 16,931	Zebulon Connection
Total	***$ 214,117***	

Chart 5.3 illustrates the portion of County vehicle registration revenues that may be provided to CAT, C-Tran, and Triangle Transit (the red block). Note that the additional revenue does not fully fund future inflation costs and the red hashed area representing future funding decisions is still applicable. Existing service providers must continue to take necessary steps to control future costs.

Chart 5.3


Operating & Capital Costs of Existing Services - Future Funding Decisions (w/ Co Veh Reg)
in thousands
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
-
CAT Buses & Poole Road Maintenance Facility
CAT & Triangle Transit Buses
FY96 FY97 FY98 FY99 FY00 FY01 FY02 FY03 FY04 FY05 FY06 FY07 FY08 FY09 FY10 FY11 FY12 FY13 FY14 FY15 FY16 FY17 FY18 FY19 FY20 FY21 FY22 FY23 FY24 FY25
Local Revenues
Non-Local (Federal & State)
Portion of $7 Co Veh Reg Fee
Farebox Revenue
Other Revenues
Future Funding Decisions
Sources: Actuals from National Transit Database & Municipal Comprehensive Annual Financial Statements

6) Does the Legislation on the half-cent sales tax for transit funding speak to a ceiling or cap on the amount of revenue that will be raised by the increase? What happens if legislation addressing tax modernization is implemented and the tax base is broadened?

ANSWER: Answer: The legislation does not establish a ceiling or cap on the amount of revenue that can be raised by the ½ cent sales tax increase. It is difficult to speculate about what tax modernization may mean for individual articles of the sales tax, as there are multiple ways that states other than North Carolina have completed tax modernization processes. The financial plans for Wake, Durham, and Orange Counties were developed using assumptions based on the existing sales tax legislation in North Carolina. A copy of the bill is attached for reference.

7) Does the financial model presume that both the half-cent sales tax and the additional $10 vehicle fee are implemented jointly or are they separate and thus may be implemented separately?

ANSWER: For Wake County, the revenues allowed by the North Carolina Session Law 2009-527 include a ½ cent sales tax, a $7 County vehicle registration fee, a $3 Triangle Transit vehicle registration fee increase, and a property tax levy in Research Triangle Park (RTP) for transit services within the district (note: the RTP property tax is not included in the financial plan). Each revenue may be enacted separately. However, the financial model assumes that all new revenues are implemented within one fiscal year after a successful sales tax referendum.

In broad terms, the following actions are required to implement each new revenue.

- ½ cent Sales Tax
    - Triangle Transit may request an advisory referendum to be placed on the ballot
    - Wake County Board of County Commissioners may hold a public hearing
    - Wake County Board of County Commissioners authorizes a voter referendum
    - Wake County Board of County Commissioners approves a transit financial plan
    - Triangle Transit's Special Tax Authority levies the sales tax if approved by voters
    - Triangle Transit collects the revenues and must use funds to administer the approved transit financial plan.

- $7 County Vehicle Registration Fee
    - Wake County Board of County Commissioners may levy a new vehicle registration fee up to $7
    - Wake County Board of County Commissioners may direct funds to Triangle Transit by Interlocal Agreement
    - Triangle Transit collects the revenues and must use funds to administer the approved transit financial plan.

- $3 Triangle Transit Vehicle Registration Fee
    - Triangle Transit may request an increase to the existing vehicle registration fee of $5 (may not exceed $8 in total)
    - Wake County Board of County Commissioners approves the request by resolution
    - Triangle Transit levies the increased vehicle registration fee
    - Triangle Transit collects the revenues and must use funds to administer the approved transit financial plan.

8) What is the asset allocation cost to benefit ratio for each of the municipalities and the unincorporated areas of the County?

ANSWER: The Wake County Transit Plan was not developed based on a cost to benefit ratio for each municipality. While there are some variables that staff can determine with a high level of precision such as: 1) the direct operating and capital costs for bus and rail services, 2) where the bus service will be provided, 3) the locations of rail stations, and 4) the average number of vehicles per Wake County household; there are other variables that are difficult to allocate to individual jurisdictions and highly subject to error. These measures may include expenditure on taxable goods, the amount of tax revenue generated by out-of-county consumers, and the progression of municipal boundaries. Staff did not attempt to quantify the benefits for each municipal jurisdiction, or citizen individual, during the development of the proposal. The transit plan development process focused on municipal partnerships, where 81% of County residents live, to development effective services as opposed to uniform service.

The results of any cost benefit analysis distributing ratios to separate municipal jurisdictions should be approached with some caution. The initial reaction may be to quickly add services, particularly bus transit, to those areas with a lower benefit cost ratio. However, individual bus routes and rail corridors take several assumptions into consideration including population density, existing traffic, and the propensity to use transit. Adding service to municipalities based solely a benefit cost ratio score would result in less economical services and routes compared to those already identified in the *Capital Area Bus Transit Development Plan*. Another factor to consider is the future ability to add or modify services in future years. As demographic and growth patterns become more clear, the Wake County Transit Plan can be adjusted. For example, if Apex were to approve a large mixed use development within their municipal jurisdiction, it would be hard-pressed for transit officials to not consider modifying existing routes or the additions of new routes, if resources allow, to better serve actual population changes and growth patterns.

9) Based on current fares, how much do you anticipate fares increasing assuming riders contribute 15% of bus and 20% of rail operating costs?

ANSWER: The Wake County Transit Plan does not assume an automatic fare increase if the plan is adopted. The farebox recovery assumption is expressed as a percentage. More specifically, the formula may be summarized as follows:

$$\text{Farebox Recovery Percent} = \frac{\text{One-way Trips} \quad X \quad \text{Average Fare per One-way Trip}}{\text{Bus Operating Costs}}$$

In this formula, changing the number of one-way trips, average fare per one-way trip, or bus operating costs independently will have an impact on the farebox recovery percentage. For example, if the number of one-way trips increases and the average fare per one-way trip and bus operating costs are held constant, the farebox recovery percentage would increase. The Wake County Transit Plan assumes that the targeted number of fare paying riders (once fully implemented) and that average fares will increase over time keeping pace with inflation will be sufficient to meet, or even exceed, the farebox assumptions.

Using the above calculation, the current average fare per one-way trip in Wake County ranged from 49 cents to $1.20 depending on the service and/or service provider. For all Wake County unlinked trips, excluding the North Carolina State University Wolfline, the average fare per one way trip was 62 cents. The Model assumes fares will increase over time keeping pace with inflation and operating and maintenance expenses. In perspective, using this assumption, the average fare per unlinked trip is forecasted to be approximately 70 cents in FY 2016, 81 cents in FY 2022, and 99 cents in FY 2030.

For more information on farebox recovery, please refer to the *Financial Model* section on page 55 of the revised draft Wake County Transit Plan, dated September 25, 2012.

10) If bus service is doubled, how much will ridership increase?

ANSWER: Table 10.1 shows how the Wake County Transit Plan anticipates riders will react to proposed increase in transit services. The plan expects a 98% increase by 2020 and an additional 8% increase by 2025. The expected increase in ridership is based on local experience (as reflected in the 2000, 2005, and 2010 columns of table 10.1) and national studies. National data where systems have increased services note that response depends on frequency of service and the types of services provided. Transit systems like the ones in Wake County with unmet demand, i.e. no service or infrequent service, typically show around a 1-to-1 return. This means that if the bus service is doubled from one bus an hour (every hour) to two buses an hour (every ½ hour) ridership would double. A local example is from the Greensboro area where they doubled service from 2003 to 2008 and ridership increased by about 90%.

Table 10.1

Bus One-way Trips – Existing plus Expanded Services added in the First Five Years*

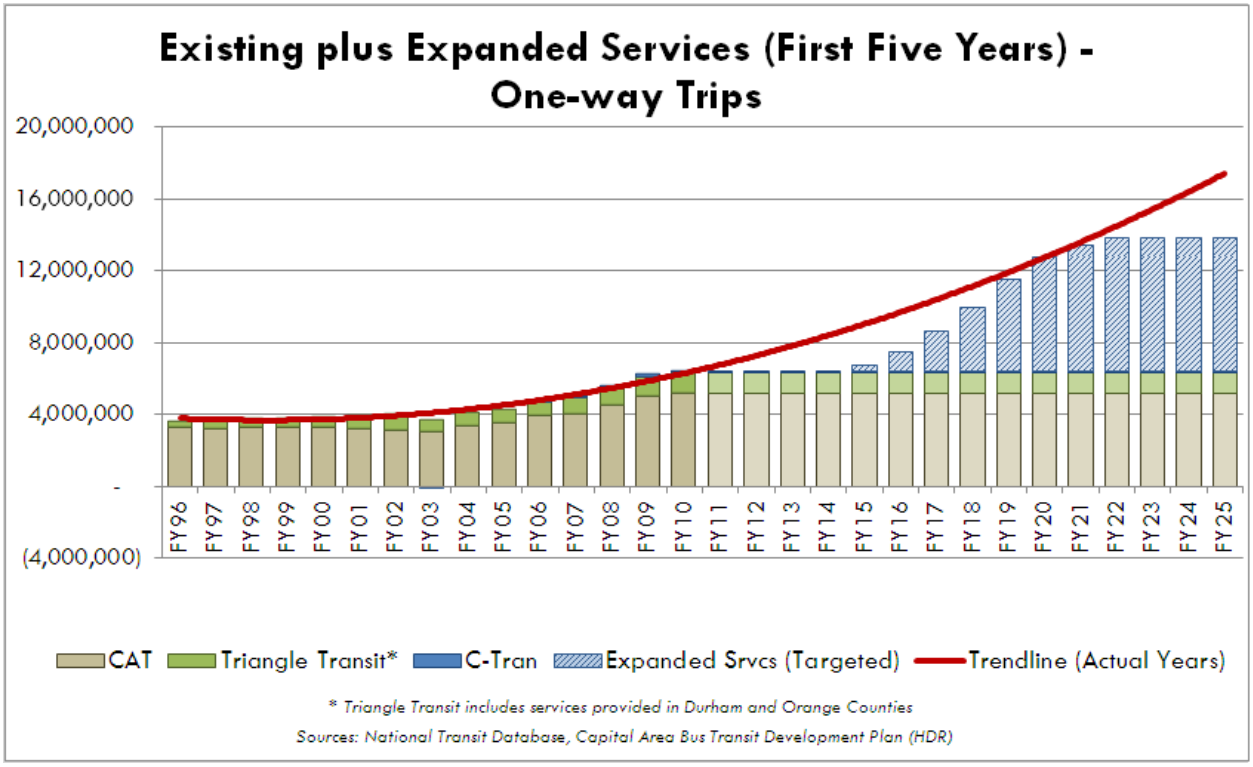
Service Provider	***2000***	***2005***	***2010***	***2015***	***2020***	***2025***
CAT	3,300,000	3,546,761	5,236,722	5,237,000	5,237,000	5,237,000
C-Tran	---	---	142,321	143,000	143,000	143,000
Triangle Transit**	619,520	780,292	1,091,626	1,092,000	1,092,000	1,092,000
Subtotal, Existing	***3,919,520***	***4,327,053***	***6,470,669***	***6,472,000***	***6,472,000***	***6,472,000***
Expanded Services	---	---	---	254,000	6,351,000	7,377,000
Total	***3,919,520***	***4,327,053***	***6,470,669***	***6,726,000***	***12,823,000***	***13,849,000***

* Wolfline ridership excluded from this analysis because of the unique service types.

** Triangle Transit numbers show ridership outside the County for base years.

Because the exact rider response will not be known until a route is added or expanded, the financial modal conservatively assumes that it will take four years for a route to reach full targeted ridership. Figure 10.1 shows how this assumption compares to recorded trend line for ridership in the area. The Wake County Plan specifically looked at connecting important destinations across the County with logical bus routes. During the implementation phase, Transit providers will do more public outreach to ensure that routes meet community needs. . In order to achieve this, the plan is built around several key principles including reliability of service, clean facilities, and improved accessibility. The focus being to provide transit users with safe, reliable, and convenient access to bus stops attracting more choice riders. All providers know that the goal is to exceed the ridership targets.

Figure 10.1


Existing plus Expanded Services (First Five Years) - One-way Trips
20,000,000
16,000,000
12,000,000
8,000,000
4,000,000
-
(4,000,000)
FY96
FY97
FY98
FY99
FY00
FY01
FY02
FY03
FY04
FY05
FY06
FY07
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FY12
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FY16
FY17
FY18
FY19
FY20
FY21
FY22
FY23
FY24
FY25
CAT
Triangle Transit*
C-Tran
Expanded Srvcs (Targeted)
Trendline (Actual Years)
* Triangle Transit includes services provided in Durham and Orange Counties
Sources: National Transit Database, Capital Area Bus Transit Development Plan (HDR)

11) What are the total costs (capital and operations) per trip for commuter rail and how does this projected cost compare to national standards and federal funding levels?

ANSWER: Commuter rail is projected to generate operating costs of $6.44 (in FY 2011 dollars) per trip prior to any revenue received, and to have an amortized capital cost of $31.19 per rail trip using appropriate discount rates and lifecycle periods for vehicles, tracks, and system elements.

Using 2010 National Transit Database information, an average cost per trip for several peer commuter rail systems was $17.44 per trip prior to any revenue received. It is interesting to note that the commuter rail systems with the lowest costs per trip were Caltrain's Joint Powers Board ($8.04 per trip) and Trinity Railway Express ($10.44), with both connecting two city central business districts, similar to the proposed Durham-Wake line. Caltrain links San Francisco and San Jose, and the Trinity Railway Express links Dallas and Fort Worth.

There are no national standards on capital cost per passenger trip because capital costs are highly individualized to local conditions and service plans, and this data is not tracked by the National Transit Database.

Table 11.1
Cost per Trip Analysis for Wake County Rail Projects

MOS Segment	**Durham-Wake CRT - West Durham to Greenfield**	**Wake MOS Light Rail - Downtown Cary to Millbrook**
Capital Costs ($2011)	$650,000,000	$1,100,000,000
Annual Operating Costs ($2011)	$10,950,000	$14,170,000
Projected Average Daily Ridership (2035)	6,800	15,900
Days per year in operation	250	365
Annualization factor for reduced weekend/holiday LRT ridership	---	300
Projected Average Annual Ridership (2035)	1,700,000	4,770,000
Amortized Annual Capital Cost	$53,030,000	$90,630,000
Capital Cost Per Rail Trip	**$31.19**	**$19.00**
Annual Operating Cost Per Rail Trip	**$6.44**	**$2.97**

Data from Durham-Wake Corridor AA, Volume 2 & Wake Corridor AA, Volume 6 MOS Analysis
Amortization schedule based on life cycle of various project elements (guideway and track: 30 years, stations: 20 years, vehicles: 25 years, right-of-way: 100 years, discounted 7%)

Table 11.2

Rail Capital Cost by Construction Category

MOS Segment	Durham-Wake CRT - West Durham to Greenfield	Wake MOS Light Rail - Downtown Cary to Millbrook
Capital Costs		
Support Facilities	$ 40.07 m	$ 36.03 m
Sitework	$ 116.96 m	$ 200.80 m
Professional Services	$ 99.35 m	$ 190.05 m
Systems (Signals, etc.)	$ 25.69 m	$ 88.39 m
Guideway and Track	$ 84.87 m	$ 229.51 m
Subtotal, Capital Cost	*$ 366.94 m*	*$ 744.79 m*
Stations, Stops	$ 80.99 m	$ 112.13 m
Vehicles	$ 79.48 m	$ 66.00 m
Contingency/Reserve	$ 47.39 m	$ 84.74 m
Right-of-way	$ 71.88 m	$ 105.08 m
Total Project Costs	**$ 646.68 m**	**$ 1,112.73 m**

Table 11.3

Amortized Capital Cost by Construction Category

Construction Category	Basis of Amortization	Durham-Wake CRT - West Durham to Greenfield	Wake MOS Light Rail - Downtown Cary to Millbrook
Capital Costs	30 years, 7% Discount	$ 29.57 m	$ 60.02 m
Stations, Stops	20 years, 7% Discount	$ 7.64 m	$ 10.58 m
Vehicles	25 years, 7% Discount	$ 6.82 m	$ 5.66 m
Contingency/Reserve	Based on Cost Contingencies Used	$ 3.96 m	$ 7.00 m
Right-of-way	100 years, 7% Discount	$ 5.04 m	$ 7.36 m
Total Costs	**---**	**$ 53.03 m**	**$ 90.63 m**

Note: Capital cost data entered directly from the D-W Corridor AA, Volume 2 & amortization schedule used from Wake AA Volume 6 MOS Analysis

12) How many spare vehicles will be required? How much will they add to the total cost of the Plan?

ANSWER: The Wake County Transit Plan anticipates the purchase of 130 buses during the first five years of implementation. This figure includes buses needed for peak service and the required spares. Table 12.1 summarizes bus acquisitions by type.

Since the November draft, Wake County staff has better aligned the transit plan with bus acquisitions details summarized in the *Capital Area Bus Transit Development Plan (Oct 2011).* This information includes vehicle types, costs per vehicle type, and additional upfitting costs (i.e. automatic vehicle locating devices, automatic passenger counters). Also, the Wake County Transit Plan includes a nearly $3.0 million (or 5.0%) contingency. The inclusion of these items revises the projected capital costs from $54.4 to $62.7 million during the first five years for bus acquisitions.

Table 12.1
Bus Purchases in First Five Years (FY 2014 through FY 2018)

	Vehicles			***Expenditures***		
Buses	***Peak***	***Spares***	***Total***	***Cost Per Bus***	***Additional Upfitting****	***Capital Costs***
40-foot Bus	41	9	50	$ 400,000	$ 25,800	$ 21,290,000
40-foot Hybrid	5	1	6	$ 600,000	$ 25,800	$ 3,754,800
30-foot Bus	33	7	40	$ 330,000	$ 25,800	$ 14,232,000
Intercity Buses	28	6	34	$ 575,000	$ 25,800	$ 20,427,200
Subtotal, Buses				***---***	***---***	***$ 59,704,000***
Bus Contingency (5.0% of subtotal)				---	---	$ 2,986,000
Total*	**107**	**23**	**130**	---	---	**$ 62,690,000**

Note: All dollars are in FY 2010, inflation assumptions are applied in the financial model.

**Additional Costs per bus includes: $18,000 for Automatic Vehicle Locating (AVL) devices, $7,000 for Automatic Passenger Counters (APC), and $800 for bike racks.*

13) Since the private and state railroads (CSX, NS NCRR) have not agreed to the use of their tracks for the commuter rail, how much will the use of their tracks add to the total cost of the plan? How will that change if they require double tracking for the entire route?

ANSWER: The existing design of the Durham-Wake commuter rail service assumes that the stretch from Durham to Raleigh will need to be double-tracked, and cost estimates contained in the plan are based on this assumption. Pages 2-13 through 2-15 in the *Durham-Wake Corridor Alternatives Analysis* document specify the double-tracking assumptions implicit in the plan, and identify the most likely agency to complete double-tracking based on the information available in spring 2011 when the document was written.

Looking forward, the North Carolina Railroad Company (NCRR) which owns the right of way between Garner and Durham has indicated its continued support of commuter rail service. Norfolk Southern is cooperating in on-going planning efforts.

Triangle Transit and the NCRR are preparing to initiate a "capacity study" of the commuter rail segment this fall, in cooperation with Norfolk Southern. This capacity study will update earlier work done by the NCRR in 2008. The product of the capacity study will be an assessment of the capital improvements (track and signal) which will need to be added in the 37 miles between West Durham and Garner so that current and future freight service will not be impaired or restricted. The product of this capacity analysis may alter to some extent the capital costs for commuter rail contained in the Durham and Wake County Plans.

NCRR and Triangle Transit may also consider a potential to extend commuter rail service east from Garner into Johnston County and west from Durham into Orange and Alamance Counties at some point in the future. The additional capital cost to support those two potential extensions will also be examined. Funding of these potential extensions would be dependent on future decisions by the counties in which the extensions are located (Alamance, Orange, Durham, Wake, and Johnston).

Finally, NCRR has requested that ridership forecasts be developed for commuter rail stations that would be covered by these potential extensions.

14) How much will the federally required (and recently updated) Americans with Disabilities Act (ADA) demand-response service (capital and operating) add to the total cost of the plan?

ANSWER: Any public entity that provides a fixed local route transit system (excluding commuter bus and rail) is required to provide a comparable service to those with disabilities. However, the Federal Transit Administration (FTA) does not require a fixed percentage or dollar amount be expended on ADA services. Local service providers are able to make local decisions on how best to provide transit services to those with disabilities. In FY 2010, the three existing service providers expended $10.7 million on ADA (or demand response) services operations and an additional $238,000 on ADA capital (primarily Triangle Transit vehicles). This amount equates to approximately 21% of the total spending in FY 2010.

The Wake County Transit Plan increases bus service frequency in existing service areas and expands bus services into new areas. For the existing areas, service providers are already providing ADA services and the Wake County Transit Plan includes the incremental cost, as much as $982,000 annually by 2020, to increase the frequencies of paratransit services as needed on a route-by-route basis. For new areas, the expansion of ADA service has been included in the annual operating costs as legally required to accompany the expansion of local fixed-route bus service into new areas. ADA services in new areas are estimated to cost $888,000 annually. The total capital associated with ADA vehicles during the first five years is approximately $1.56 million (including a 5.0% contingency).

For more information on ADA transit services, please refer to the *ADA Considerations* section on page 52 of the revised draft Wake County Transit Plan, dated September 25, 2012.

15) What is the basis of the ridership estimates for bus, commuter rail and light rail? We request a full and complete documentation of the methods used to forecast ridership and the basis of the assumptions used. Does the model used meet FTA approval?

ANSWER: The ridership estimates for all transit modes and all roadway facilities in Wake County are projected by the Triangle Regional Model (TRM), which is built and maintained by the Institute for Transportation Research & Education's TRM Service Bureau, at NC State University.

While it is a very complex piece of software, a simplified description of its methodology is as follows:

- Receive input from model users (i.e. MPOs, NCDOT, Triangle Transit) on the distribution of jobs and employment from both the current time and projected into the future
- Program in the existing and projected future road and rail networks
- Combine the two elements above to simulate traffic levels, congestion, and mode choices between non-motorized (bike/walk) and motorized modes (car/transit/carpool) based on capacity of various transportation facilities during rush hour, and then another mode split among the motorized modes
- Calibrate results to observed data from the present for both highways and transit
- Project future year results

Inputs to the model include surveys of commuters in our region, local and regional traffic counts and bus ridership counts, and other inputs such as commercial vehicle surveys, parking prices at universities, and roadway speed limits.

With the process described above, the TRM is a 4-step, multinomial logit travel demand model. It was reviewed and rated by a peer group of national modeling leaders in November 2011 and was described as a "better than state-of-the-practice" model. The model performs very well on regional measures of effectiveness compared to many US metro areas, including much larger regions. An extensive manual with equations and details on the model's technical methods is available for anyone who would like to read it. We can provide that if such levels of detail are sought. FTA will not provide a formal review of our regional model until a project has been submitted for consideration into the New Starts Program.

The current bus ridership targets listed in the plan are based on service type and the number of new hours of service proposed (See table 15.1).This simple formula takes the number of new bus service hours provided times the ridership target number for the service type listed on Table 15.1. Each individual new or expanded route has a ridership target associated with it and these targets are combined to determine the overall system ridership.

Table 15.1

Number of Bus Passengers Targeted per Service Hour per Service Type

Service Type	Weekday	Saturday	Sunday
Small Town Local Circulator – Fixed	12	10*	8*
Small Town Local Circulator – Flex	9	8*	7*
Commuter Service	18	15**	12**
Local Suburban	12	10	8
Local Urban	25	20	15
Urban Circulator	25	20	15

* These numbers are not used in the plan since service of this type is not proposed on these days

** These numbers are only used on specific routes since the majority of commuter services only run on Weekdays

This method was used in the development of the bus component of the Plan for two reasons: 1) the metric could be easily and quickly compared to ridership on existing known services (See Table 15.2), and 2) the ridership target established set a "to be met or exceeded" number for the transit provider and works well with the flexibility of bus operations.

Table 15.2

Actual Wake County Area Passenger Counts by Service Hour and Service Type (2011)

Route Name (Route Service Type)	Weekday	Saturday	Sunday
Wake Forest / Wake Field (Small Town Local Circulator)	12	N/A	N/A
TTA Route #100 (Commuter Service)	19	33	N/A
TTA Route #KRX Knightdale (Commuter Service)	4	N/A	N/A
CTRAN Route 3 Harrison Avenue (Local Suburban)	4	5	N/A
CTRAN Route 5 Kildaire Farm (Local Suburban)	9	9	N/A
CAT Route #15 Wake Medical (Local Urban)	32	51	28
CAT Route #1 Capital (Local Urban)	41	55	50
CAT Route #2 Falls of Neuse (Local Urban)	35	21	20
CAT Route R-Line (Urban Circulator)	21	23	23

N/A – Service does not operate on these days

As a separate process, the attributes of the communities across Wake County were examined. This process identified what type of bus service, if any, would be appropriate in different areas depending on the area's population characteristics. The types of service proposed were normalized across the plan so areas with similar characteristics received the same type of service. When this task was completed the hours associated with each service (minus the amount of existing service already provided) was multiplied by the average passengers per hour calculated (Table 15.1).

To ensure that the Plan is financially conservative, the revenue forecasts assume that ridership will not reach the “target” until four years after service starts. Additionally, this time gives the bus provider and the community time to streamline routes and scheduling.

16a) If the Plan's forecasts of employment and population are not achieved, how will ridership be affected? Please be specific.

ANSWER: Although this greatly depends on how far the employment and population projections are from the actual numbers, there are some base statements that can be made. See page 21 of the updated transit plan, dated September 25, 2012, for more detail on the different service types.

- Response to the first phase local bus service improvements will generally be unaffected. With proper route design they can meet the targeted ridership with today's population. The majority of areas are not served or underserved today.
- Commuter routes, which compete differently with the roadway network, would need to be carefully timed to ensure that they are providing a desired product. Many proposed routes have appropriate conditions today while others may need to be delayed if growth is slower than expected.
- Where the development market locates the new growth areas will be as important as the overall growth rate. If these new areas are not transit supportive the transit system may struggle even if the growth rate is exceeded. If these areas are transit supportive the transit system may thrive even with a notably lower growth rate.

It is important to note numbers uses to generate ridership numbers and determine the transit projects, are the same numbers used to predict future roadway improvements as well as water and sewer services. Figure 16.1 shows how the predicted population growth compares to the trend line. The population growth predicted is notably lower than the trend. The projections suggest that on average 25,500 new residents would move to the County each year. According to Wake County estimates the area grew at 90% of that number between 2010 and 2011 in the midst of the recession.

Figure 16.1

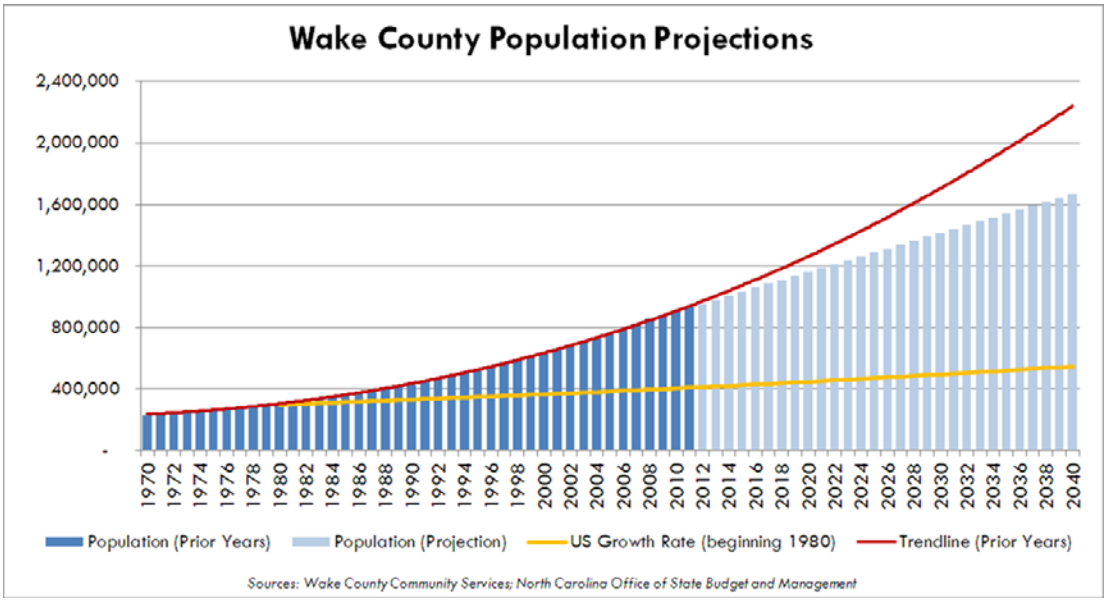
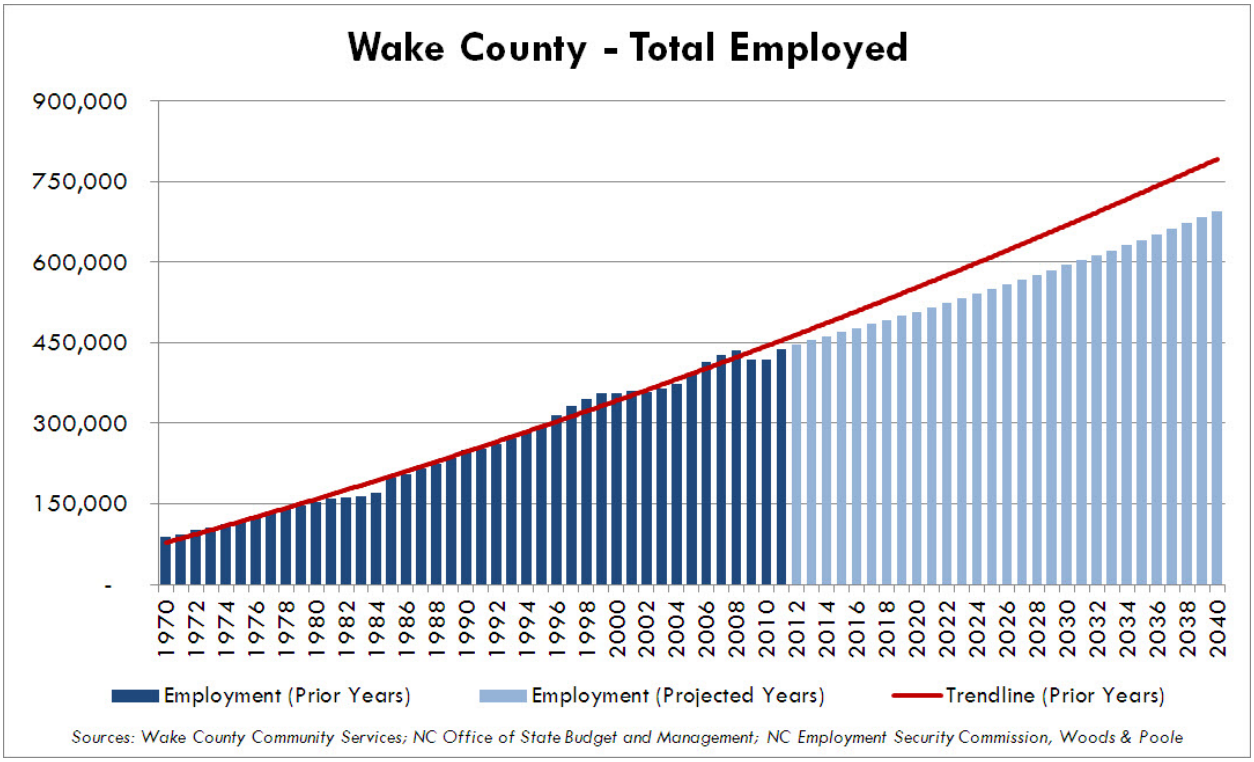


Figure 16.2 shows how the predicted employment growth compares to the trend line. As with the population growth the numbers still predict growth but the rate is notably reduced from the trend. The projections suggest that on average 10,000 new jobs would be created in the County each year.

In today's economic climate the predicted employment numbers may be seem improbable. The numbers show robust growth and therefore "assume" that the economy will evolve to create a new class of jobs and, importantly, our area will compete well in attracting and inspiring these jobs. It must be admitted that this is an optimistic forecast, but then the region has past years on which to base this optimism. A close look at the data also shows a pessimistic element, namely that employment growth does not keep pace with population. This means the average number of jobs per capita is decreasing and in 20 years the jobs per capita may be lower than in 1970. Even with the overall growth in jobs this will have a profound effect on the job market.

Figure 16.2



16b) What is the basis for the 5 fold increase in downtown Raleigh employment? What is the basis for the doubling of employment in RTP? NCSU?

ANSWER: The table shown on page 18 of the Transit Plan from November 2011 has been found to contain various errors. The table erroneously reported both the current day estimates (2005 starting numbers too small) and the future year projections (2035 ending number too big). This table will not appear in future versions of the plan.

Further work in these areas suggests that the rates shown in Table 16.2 more accurately reflect what the 2040 employment model is predicting. The employment growth shown in each of these areas reflects the plans and goals of the business groups and agencies directly involved with development. The high growth rate shown at NC State is more a reflection of relatively low 2010 base number rather than high expected growth. The NC State area is only anticipating around 900 or so new jobs.

Table 16.2
Predicted Employment Growth in Major Employment Areas by 2040

Employment Area	Number of Jobs 2010	Expected Growth Rate by 2040
Downtown Raleigh	46,000	4%
NC State	3,500	25%
Research Triangle Park	49,000	6%

17) If the Plan's assumed vehicle operating speeds are not achieved, how will ridership be affected?

ANSWER: If projected operating speeds are not achieved, travel times will be longer and ridership will potentially be lower. That said, the line between Raleigh and Charlotte already has several projects funded through the 2009 high-speed rail stimulus programs, and much of the line traversed by the proposed commuter rail already meets the technical requirements to deliver the top speeds anticipated in the commuter rail plan. The primary plan change that would limit operating speeds would be the addition of new stations, though adding stations also adds ridership by providing additional nodes of access to the system.

18) How will ridership be affected if parking fees are implemented at rail stations and park and ride lots? How will that affect the operating budget?

ANSWER: Parking charges are not anticipated at stations, thus parking fees are not part of the Wake County Transit Plan. The implementation of parking fees at rail stations is unusual for new commuter rail systems in the United States. However, if ridership demand is strong and rail station lots open to heavy oversubscription, pricing could be used to optimize the occupancy of lots along the line. Stations with underutilized parking may have lower prices or none, while stations with excess demand may have parking prices applied. This may shift ridership from one station to another. Some passengers who drive to stations will take the bus to the station instead; some others may choose not to use the rail service depending on the price of parking.

A more extensive assessment of the impact of any parking fees would require assumptions to be established about which stations charged for parking and the appropriate fee. For example, if parking were added to the Union Station complex, land values suggest it would almost certainly be priced, but a decision about whether to price parking and how much would only come after a decision that parking was to be built at that station.

Table 18.1 summarizes potential parking facilities and the number of parking spaces. The precise number of spaces may vary depending upon the transit services mix (i.e. bus, rail). In most cases, the higher number of parking spaces is driven by bus transit services.

Table 18.1

Potential Wake County Parking Facilities

Location	***Facility Type***	***Number of Parking Spaces****
Beaver Creek	Bus Park-and-Ride	1040
Cary Downtown**	Commuter & Light Rail Station, Transit Center, & Park-and-Ride	200 – 940
District Drive (West Raleigh)**	Commuter & Light Rail Station, Transit Center, & Park-and-Ride	1000 – 1420
Garner Downtown	Commuter Rail Station & Park-and-Ride	400
Garner Greenfield Station***	Commuter Rail Station & Park-and-Ride	400 – 1000
Knightdale	Bus Park-and-Ride	400
Hammond/Rush	Commuter Rail Station & Park-and-Ride	300
McCrimmon Station	Commuter Rail Station & Park-and-Ride	200
Millbrook Road	Light Rail Station & Park-and-Ride	200
New Hope Church Road	Light Rail Station & Park-and-Ride	200
NE Maynard Road	Light Rail Station & Park-and-Ride	200
NC State University Station	Commuter & Light Rail Station, and Bus Transit Center	---
Regency Park	Bus Park-and-Ride	400
Triangle Metro Center (Research Triangle Park)**	Commuter Rail Station, Transit Center & Park-and-Ride	200 – 600
Six Forks Road	Light Rail Station & Park-and-Ride	300
Triangle Town Center	Transit Center & Park-and-Ride	940
Union Station (Raleigh Downtown)	Commuter & Light Rail Station, and Bus Transit Center	---
Wake Tech (Main Campus)	Bus Park-and-Ride	500
Wakefield	Bus Park-and-Ride	600
Wendell Falls	Bus Park-and-Ride	400
Whitaker Mill Road	Light Rail Station & Park-and-Ride	200
Total		**8,080 – 10,240**

* The actual number of parking spaces may change based on the blend/mix of implemented transit services. Bus is the service mode that requires the most available parking.

** Bus is the service mode that requires the most available parking.

*** Commuter rail is the service mode that requires the most available parking.

19) If commuter rail speeds are at or below U.S. averages, how will this impact ridership? Would it impact federal funding?

ANSWER: According to the American Public Transportation Association (APTA) 2011 Public Transportation Fact Book, the average speed for the 27 commuter rail systems in the United States was 31.2 mph. These speeds are the product of track alignment, station spacing, and top-end speeds (in our case79 miles per hour) and the acceleration deceleration characteristics of the train. The Wake County Transit Plan states that the commuter rail train service would be able to cover 37 miles in 52 minutes, for an average speed of 42.7 mph. We do not anticipate the speed to fall below this level unless other variables in the track design (such as adding additional stations) emerge in the environmental review process to lower average speeds.

20) The Plan indicates that commuter rail speed will be faster than U.S. averages. How will this be achieved?

ANSWER: The tracks used by the proposed commuter rail are the same that are being upgraded for the Southeast High Speed Rail project. Even if no further improvements are made beyond those already proposed and funded by the grant received through the ARRA stimulus program, top speeds in the Raleigh-Durham section will be 79 mph. At most other commuter rail properties, the top speed is 59 mph. This and the station spacing, averaging over 3 miles, allow trains to cruise at high speeds between stations. Super-elevation (raising of the outside track) in curves also gives trains the ability to maintain higher speeds than on flat tracks, and all the curves above a certain radius within the alignment will be super-elevated through existing design or in-process improvements being conducted as part of the high-speed rail stimulus.

The APTA figures from which this question is derived calculates average speed by taking vehicle revenue miles operated and dividing by vehicle revenue hours operated. Is that a fair comparison? See average speeds per system below, organized from fastest to slowest, for 2010 from the APTA using 2010 NTD data:

Table 20.1
Commuter Rail Average Speeds and Percent of Total United States Commuter Rail Service

State	Agency	Average Speed (mph)	Percent of Total US CR Service
CT	Connecticut Department of Transportation (CDOT)	45.2	0.4%
TTA	**TTA D-O Commuter Rail**	**42.7**	---
CA	North County Transit District (NCTD)	40.2	0.4%
CA	Southern California Regional Rail Authority (Metrolink)	40.1	3.8%
CA	Altamont Commuter Express (ACE)	39.7	0.2%
MD	Maryland Transit Administration (MTA)	39.1	1.5%
WA	Central Puget Sound Regional Transit Authority (ST)	38.4	0.4%
NM	Rio Metro Regional Transit District (RMRTD)	38.1	0.7%
NY	MTA Metro-North Railroad (MTA-MNCR)	38.0	14.0%
MN	Metro Transit	36.3	0.3%
ME	Northern New England Passenger Rail Authority (NNEPRA)	35.4	0.7%
IN	Northern Indiana Commuter Transportation District (NICTD)	35.1	1.4%
CA	Peninsula Corridor Joint Powers Board (PCJPB)	34.9	2.4%
NJ	New Jersey Transit Corporation (NJ TRANSIT)	33.9	17.5%
VA	Virginia Railway Express (VRE)	31.6	0.6%
NY	MTA Long Island Rail Road (MTA LIRR)	30.9	14.7%
PA	Pennsylvania Department of Transportation (PENNDOT)	30.6	0.9%
IL	Northeast Illinois Regional Commuter Railroad Corporation (Metra)	29.9	14.3%

FL	South Florida Regional Transportation Authority (TRI-Rail)	29.8	2.2%
UT	Utah Transit Authority (UTA)	29.7	1.4%
MA	Massachusetts Bay Transportation Authority (MBTA)	29.5	8.6%
TN	Regional Transportation Authority (RTA)	28.8	0.2%
PA	Southeastern Pennsylvania Transportation Authority (SEPTA)	26.9	11.7%
TX	Capital Metropolitan Transportation Authority (CMTA)	25.0	0.2%
TX	Dallas Area Rapid Transit (DART)	24.2	1.1%
OR	Tri-County Metropolitan Transportation District of Oregon (TriMet)	21.8	0.3%

21) Which designated or proposed rail stations have the necessary surrounding population density of 8,000 persons per square mile to support rail transit?

ANSWER: Population density alone does not determine the success of a rail station. Many factors contribute to the overall activity level in a station area. Generally, job density, mix of uses, the quality of the pedestrian environment, number of street intersections, local provision of parking and its price, and the utilization rate of any park-and-ride facilities present all contribute to the ability of a neighborhood to support rail transit.

Commuter rail lines, with service primarily at rush hours, are far more likely to be driven by park-and-ride activity within a 2-6 mile radius than by development within a half-mile radius, unless the station in question is a major employment center.

More broadly relevant, however, is the point that the rail investments that most influence land use changes, such as light rail, are not targeted at the densities of today, but of the projected land uses 10-20 years in the future. Raleigh has recently re-oriented much of its comprehensive plan to capture a significant portion of its growth within future light rail station areas.

The ability of Raleigh (and Cary, and any other municipalities pursuing station area planning) to bring these plans to fruition over the next decade will significantly influence the ability of any rail investments to be high-performing in terms of transportation.

22) How will costs be paid if Federal or State funds are not available due to budget cuts or shifting priorities? How will the shortfall be handled? How will the minimum fund balance be affected? What specific effect would that have on the progress of the project?

ANSWER: The federal and state government currently provides assistance to Wake County transit service providers. In FY 2010, CAT, C-Tran, and Triangle Transit received $22 million, or 31% of overall revenues, from the federal and state governments. Federal revenues are received in the form of established formulas based on performance and discretionary grant awards for capital projects. These federal programs have been in place for years and are regularly counted on by many transit systems across the country. If federal funds were to be eliminated or significantly reduced, it would impact existing transit service providers nationwide and not just Wake County. An elimination or reduction in federal funding would significantly impact systems that leverage local dollars to build and maintain transit infrastructure including railways, facilities, and vehicles. The funds available through these programs represent a small portion of overall federal spending and legislation passed by the United States Congress in June of 2012 reaffirmed the continuation of several formula-based funding streams (Moving Ahead for Progress in the 21st Century, or MAP-21).

The serious fiscal challenges at the federal and state level are the primary reason the Core Transit Plan was developed. The Core Transit Plan assumes that the federal and state government will continue to support a base level of transit investment and leverage local dollars to fund transit improvements. This plan relies on the continuation of federal and state funds provided to urban areas using established formulas, bus discretionary grants, and no federal/state discretionary grants for commuter rail capital. The Enhanced Transit Plan represents an optimistic perspective in which Wake County is provided significant federal and state support for bus, commuter rail, and light rail in the early years of implementation.

It is possible that these “regular” transit funding sources could be targeted for elimination to reduce overall federal and/or state spending. If this occurs, the move could constitute a significant modification to the Wake County Transit Plan that may include, but not limited to, the delay or elimination of capital projects including bus vehicles, bus infrastructure, commuter rail, and/or light rail, the use of fund balance/reserves (for short-term disruptions only), or securing the financial resources through additional bonds. According to the sensitivity analysis (Appendix J of the revised draft Wake County Transit Plan, dated September 25, 2012) a reduction in federal and state support of up to 20% would have slight impacts on the plan requiring increased borrowing and a slower roll out (2-5 years) of certain capital investments, including commuter rail.

The Wake County Transit Plan identifies the need to maintain a fund balance to maintain adequate cash flows. The targeted minimum fund balance is based on the amount of debt service secured to construct capital and the plans target of a minimum coverage ratio of 1.25x. The Core Transit Plan maintains a one year annual debt service coverage ratio of at least 1.50x or greater and the Enhanced Transit Plan is 2.24x or greater. Reductions in federal and/or state revenue may have a direct impact on fund balances if it is identified as the primary revenue to replace the loss of federal and/or state funds. Other decisions, such as increased borrowing, may increase the minimum fund balance requirements or could

reduce minimum fund balances if capital projects that require debt service are eliminated. The following charts summarize projected fund balance and debt service coverage ratios for the Core and Enhanced Transit Plans.

Chart 22.1 (Core Transit Plan)

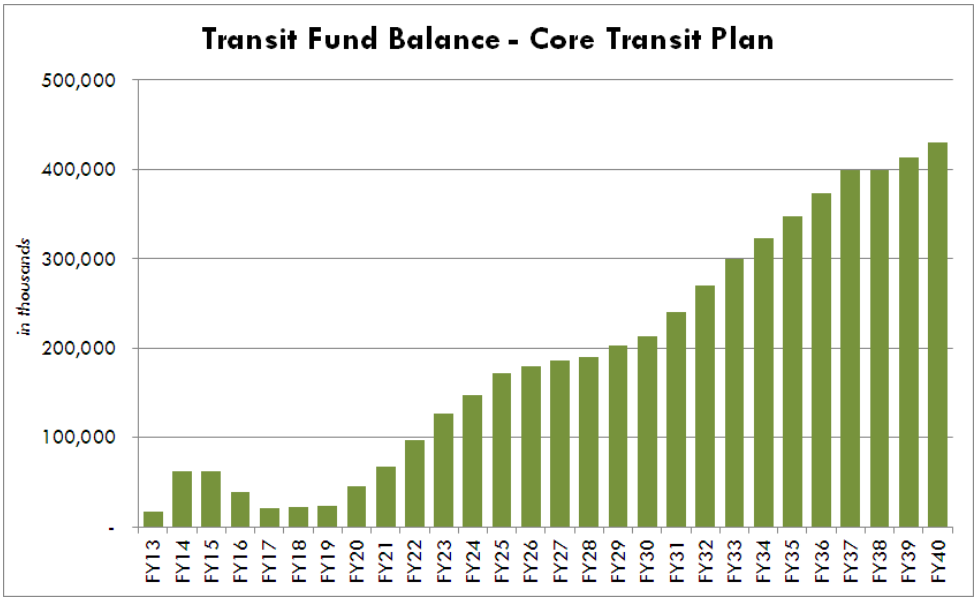


Chart 22.2 (Core Transit Plan)

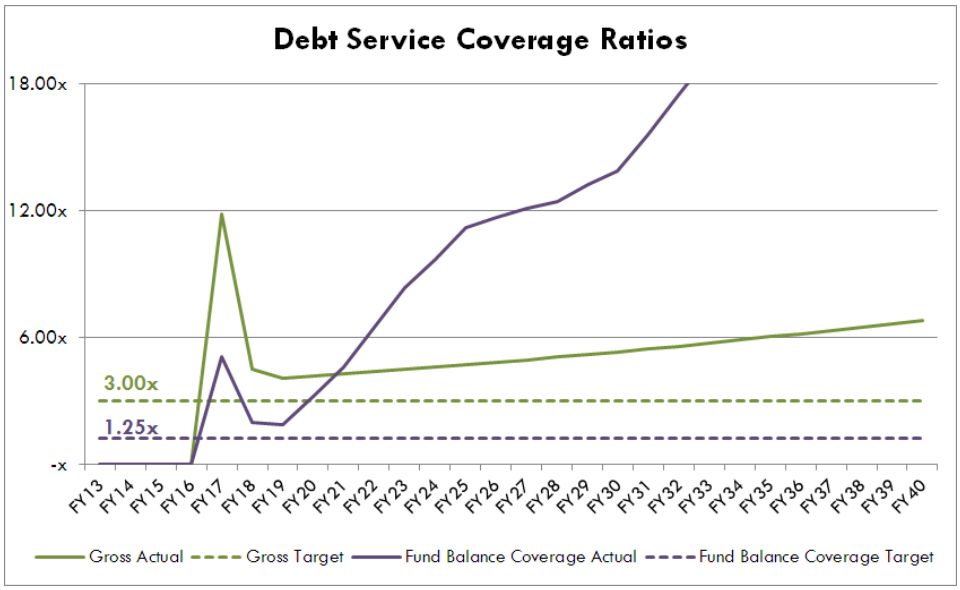


Chart 22.3 (Enhanced Transit Plan)

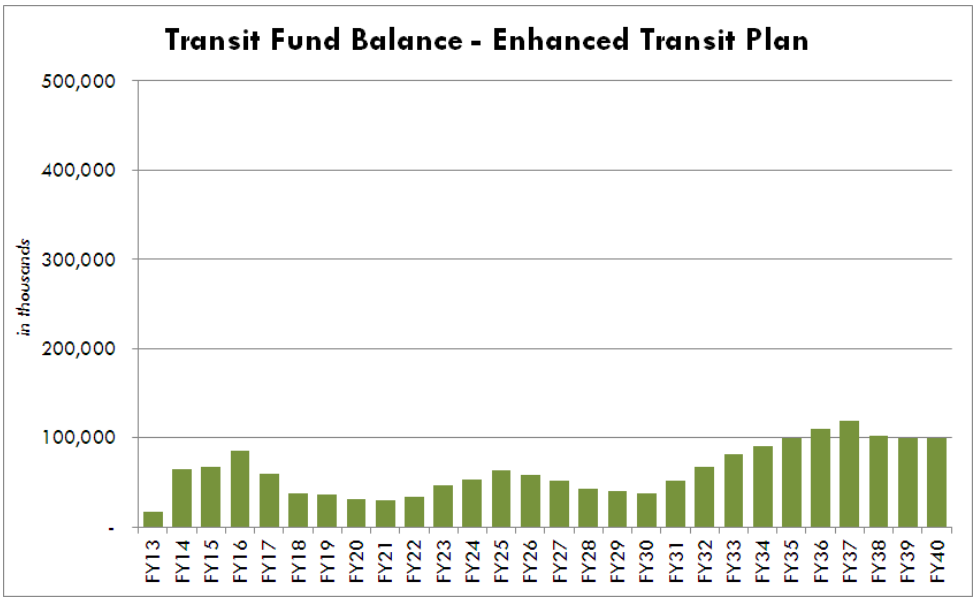
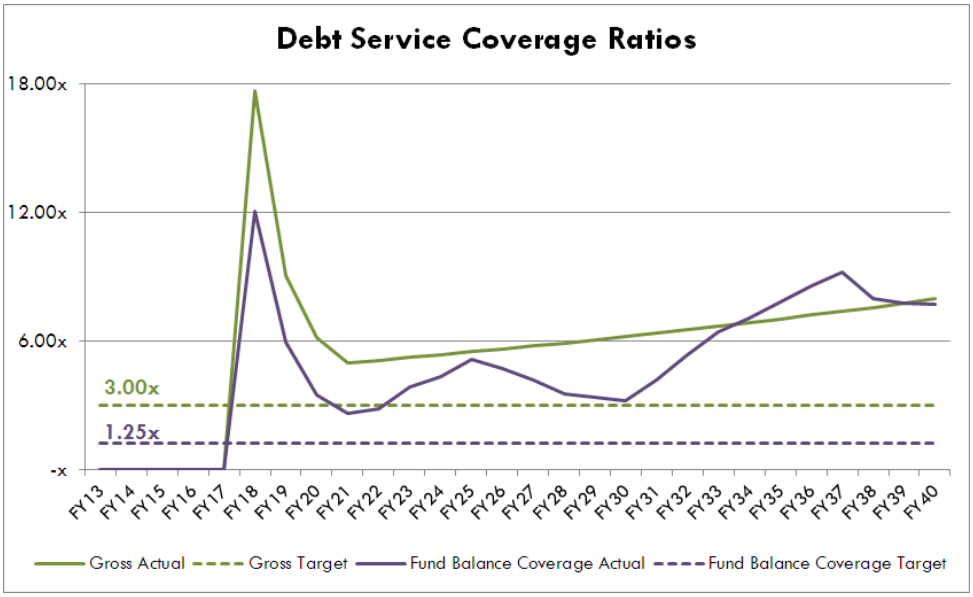


Chart 22.4 (Enhanced Transit Plan)



23) How many rail and / or bus stations are planned in close proximity to the Wake Technical College campuses?

ANSWER: Four of the six Wake Technical College Campuses are served by bus service today. Wake Technical Community College started service to its Main Campus on its own (through a private contractor) and then a couple of years later approached Capital Area Transit (CAT) about operating service (contracted though CAT's larger contract). This relationship has benefited both organizations and has allowed the service to run more frequently and be open to the public. Because of the positive characteristics of the service to Main Campus, (i.e. it had high ridership, provided options for students with limited or no access to a car, Wake Tech was good partner) CAT extended service to the North Wake Campus. Both of these routes cross through low transit use areas to reach the Campus locations. The Health Sciences Campus near WakeMed and the Public Safety Campus on Chapanoke Road in South Raleigh are served by CAT buses on regular routes. The two unserved campuses are the RTP Campus in Morrisville and the Western Wake Campus south of Cary.

Both of the education centers that Wake Tech currently operates; the Adult Education Center on Capital Boulevard and the Eastern Wake Tech Educational Center in Zebulon are currently served by bus routes. 25 of the 32 community locations that Wake Tech operates are also currently accessible via current bus routes. The majority of the locations that are not currently accessible are located in southern Wake County in the Fuquay-Varina area.

Moving forward the Transit Plan proposes to increase the frequency and streamline bus routes, thereby cutting the travel time, to many of the existing connections to the Wake Tech facilities. In some cases (Main Campus, Northern Wake, Eastern Wake), the campus or center locations are located at good end of the line points which could help ridership on the entire route. These locations can also serve as logical places for residents who live further away from urban areas to access the transit network. The Transit Plan in these locations proposes to work with Wake Tech and fund, as appropriate, parking. In other cases (the Adult Education Center, Health Sciences Campus) the Wake Tech facilities will be adjacent to very high level bus services. The first phase of the Wake County Transit Plan, among all the other service improvements, proposes to boost and support very frequent (every 15 minutes) and efficient (signal priority, potentially managed lanes) along New Bern Avenue and Capital Boulevard. Many of the currently unserved Wake Tech facilities will benefit from the extension of services proposed. Specifically, locations in Fuquay-Varina, Garner, North Raleigh, Wendell and Knightdale will be connected.

The RTP Campus in Morrisville is the only main campus affected directly by the first phase rail projects. This location that is not served today and will only be linked to commuter bus service in the Plan's proposed bus expansion. When Commuter Rail is implemented the RTP Campus would be linked to the proposed McCrimmon Parkway station. The Town of Morrisville is currently developing plans of how these connections would work and how the campus would link to new development proposed in the area.

As currently proposed, the only Wake Tech location that would not have transit service (either directly connecting or within a reasonable safe walking distance) when the first phases of the Plan are implemented is the facility at Ten Ten Road and Kildaire Farm Road south of Cary.

24) What are the identified employment centers in the plan and how are these stops serviced?

ANSWER: The largest employment centers in Wake County are downtown Raleigh and NC State University. Both are served directly by commuter rail with a stop, including a stop at the proposed Union Station site. Other important employment centers in Wake County include downtown Cary and McCrimmon Pkwy area in Morrisville. Also Triangle Metro Center "North RTP," downtown Durham and Duke University stations all serve employment centers which will be of interest to Wake County commuters.

25) Please provide the amounts of rider paid fares per trip compared to total taxpayer subsidy (operations and capital) per trip for bus, commuter rail and light rail. Please identify the subsidies per trip by source – local, state and federal dollars.

ANSWER: The following table summarizes the total annual capital and operating cost per rider by revenue/subsidy source for the Core and Enhanced Transit Plans. The cost per rider for capital assets use a seven percent amortization rate over the expected useful life of each asset (i.e. 40-foot bus is 12 years, rail vehicle 25 years, bus/rail stations 20 years). Bus ridership is based on the number of targeted riders after full implementation of the first five years. Rail ridership projections are based on FY 2035. All operating costs assume full implementation of the service and revenues available during FY 2035 but are expressed FY 2011 dollars.

Table 27.1
Annual Capital and Operating Cost per Rider by Revenue Source

	Core Transit Plan			**Enhanced Transit Plan**		
	*Expanded Bus**	*Commuter Rail***	*Light Rail****	*Expanded Bus**	*Commuter Rail***	*Light Rail****
Fare	0.57	1.29	---	0.57	1.29	0.59
Local	4.01	36.34	---	4.01	7.80	6.62
State	1.41	---	---	1.41	8.44	4.75
Federal	1.93	---	---	1.93	20.11	10.01
Total	**7.91**	**37.63**	---	**7.91**	**37.63**	**21.97**

** Bus costs per rider are based on information provided in the "Capital Area Bus Transit Development Plan" using FY 2010 dollar. All estimates were adjusted to FY 2011 dollars for comparison purposes with commuter and light rail.*
*** Commuter rail costs are based on Alternatives Analysis of the Wake/Durham Corridor*
**** Light rail costs are based on the Wake Corridor MOS Evaluation.*

The formulas used to calculate capital and operating costs per rider are summarized below. To calculate cost per rider, the following formula was used:

$$\text{Capital and Operating Cost per rider} = \frac{\text{Sum of all annualized capital assets + annual operating costs}}{\text{Annual ridership}}$$

All rail capital assets were categorized as one of the following: support facilities, sitework, professional services, systems (i.e. signals), track and guideways, stations/stops/terminals, vehicles, right-of-ways, and contingencies/reserves. For additional information on rail annualized capital costs per rider, please refer to question 11. For bus infrastructure, the annualized capital costs assumed facility life spans of 20 years for stations/stops/terminals and 30 years for the maintenance facility. To calculate the annualized capital asset costs for each category, the following formula was used:

$$\text{Annualized Capital Asset Costs} = \frac{\text{Capital Asset Cost} \times \text{7\% Amortization Rate}}{1 - (1 + \text{7\% Amortization Rate})^{-\text{Useful Life of the Asset}}}$$

26) The Plan anticipates the use of Bus on Shoulder operation. Has either TTA or DOT consulted local emergency, law enforcement or fire services to determine the impact on public safety? If so, what was their response?

ANSWER: The BOSS program (Bus on Shoulder System) is currently in a pilot stage, only active in Durham County in North Carolina.

Prior to pilot implementation in Durham County:

- A BOSS team was convened by NCDOT, with assistance from the Regional Transportation Alliance, and included:
    - Wake County
        - Cary Transportation Department
        - Cary Transit (C-Tran)
        - Cary Police
        - Cary Fire
        - Morrisville Police
        - Morrisville Fire
        - Raleigh Transportation Department
        - Raleigh Transit (CAT)
        - Raleigh Police
        - Raleigh Fire
        - Western Wake Fire
    - Durham and Orange counties
        - Chapel Hill Transit
        - Chapel Hill Fire
        - Durham Transportation Department
        - Durham Transit (DATA)
        - Durham Police
        - Durham Fire
        - Durham Sheriff's Department
        - Durham EMS
        - Orange EMS
        - Durham-Chapel Hill-Carrboro MPO
        - Triangle Transit
    - State and National Partners
        - NC State Highway Patrol
        - Federal Highway Administration (FHWA)

- The team researched and discussed the program and developed an Implementation and Operations Plan (IOP). This coordination process began about two years ago.
- There were initial concerns from first responders across the region

- The BOSS team responded to those concerns by delaying implementation and continuing research and information gathering.
- The BOSS team conducted an investigation of Minnesota and Ohio experience (we specifically asked both about potential safety implications).
- Members of the BOSS Team travelled to Minnesota specifically to address those concerns (as well as others). The visit included direct conversations with Minnesota first responders. Attendees included representatives from Durham Police and the State Highway Patrol, as well as the City of Raleigh Traffic Operations manager and the City of Raleigh Transit Administrator.
- The IOP was adjusted to make sure we followed through with implementation parameters that address safety as well as evaluation of the safety of the pilot.
- Selection of pilot BOSS section on I-40 in Durham County was based on field review by the NCDOT Division of Highways.

During the ongoing Durham County pilot:

- Subservient use of the shoulder by buses (they have to get out of the way) continues to be an operating procedure
- Rapid towing is employed to clear shoulder for use by the buses and may also increase safety for the motoring public, even when BOSS is not in use
- The BOSS Team continues to evaluate the pilot to ensure safety is not compromised.
- There have been no crashes in the pilot location related to BOSS usage since the service was inaugurated on July 16, 2012.
- Communications between NCDOT, TTA, and law enforcement (both through the BOSS team and daily) continue to part of the operating procedures.

Before there is any expansion of the BOSS program into Wake County, either to provide relief for the upcoming I-40/I-440 reconstruction project, or as part of future transit operations in the draft Wake County Transit Plan or both, the regional BOSS team will meet to examine possible routes, locations, and implementation steps and timelines for Bus on Shoulder. In addition, the statewide BOSS IOP (Implementation and Operations Plan) will be reviewed and potential changes or suggestions discussed.

While there is no formal timeline for expansion of BOSS into Wake County, representatives from the regional BOSS team plan to meet with the Wake County Fire Commission in November 2012 to provide an update on the pilot program in Durham County and to respond to questions.

27a) The Plan states that in the "early years of the plan" that the sales tax would generate an estimated $55 million to $60 million in revenues. The statement does not estimate the anticipated revenues from the increase in the Vehicle registration fee increase for the same period.

ANSWER: Since the November draft, staff has reviewed and updated revenue projections as needed. The revised projections reflect actuals from agency comprehensive annual financial statements and trends reflecting the most recent economic recession. For example, sales tax revenues have exceeded FY12 projections year-to-date. The most recent sales tax projection estimates that sales tax revenues will generate $55.6 to $62.6 million annually. The revised annual revenue projections for each local revenue source during the first few years are as follows:

Table 27.1
Revenue Base Comparisons (First Five Years)

Revenue	*WCTP November 2011 Draft*	*WCTP September 2012 Draft*
½ Cent Sales Tax	$54.8 to $60.2 million	$55.6 to $61.1 million
Vehicle Registration Fee; $3 Triangle Transit Increase	$2.3 to $2.5 million	$2.3 to $2.5 million
Vehicle Registration Fee; $7 New County Fee	$5.4 to $5.8 million	$5.4 to $5.8 million
Vehicle Rental Tax (Existing Fee, Wake County Portion)	$3.3 to $3.6 million	$2.9 to $3.1 million

27b) The plan estimates that the local share (cost) of the Plan's bus service for the first 5 years is $138,329,000. Please match the estimated cost and revenue calculations for both the bus and rail service including the registration fee for the first 5 years?

ANSWER: In order to match up estimated cost and revenue calculations, it is important to note two things. First the table referred in the question was revised to reflect feedback and Wake County staff revisions. Changes include increased specificity of capital costs, reduced federal capital cost shares, and delaying bus operating costs to reflect likely procurement and upfit schedules. The revised table is shown in Table 27.2 and is shown in FY10 dollars (based on the *Capital Area Bus Transit Development Plan)*.

Table 27.2
Bus System Costs - First Five Years and Funding Sources Assumptions

First Five Years (FY 14-18)*	Total	Non-Local Share	Local Share	Non-Local %	Local %
Capital Costs	$284,797,000	$185,118,000	$99,679,000	65.00%	35.00%
Operating Costs**	$43,988,000	$4,399,000	$39,589,000	10.00%	90.00%
Total	$328,785,000	189,517,000	$139,268,000	-	-

*All Dollars are FY10

**Does not include Rural Transit Service (i.e. Wake TRACS) or current service operating assistance provided through the County Vehicle Registration Fee.

To match projected revenues with expenses, it is necessary to consider all dollars in the year of expenditure/revenue. These costs will include inflation and the associated revenues. Table 27.3 includes the revenues (including sales tax and vehicle registration revenues) and bus operating support (in the year of expenditure). Tables 27.4 and 27.5 summarize bus and rail capital expenditures for the Core Transit Plan.

Table 27.3

Bus and Rail Operating – Based on Year of Revenue/Expenditure (Core Transit Plan)

Revenues	**FY14**	**FY15**	**FY16**	**FY17**	**FY18**	**Total**
Local & Farebox						
Sales Tax, ½ cent	$ 56.7m	$ 58.2m	$ 59.6m	$ 61.1m	$ 62.6m	$298.3m
Vehicle Reg, $3 TT	2.4m	2.4m	2.5m	2.5m	2.6m	12.4m
Vehicle Reg, $7 County*	5.5m	5.7m	5.8m	5.9m	6.0m	28.9m
Vehicle Rental	2.9m	3.0m	3.0m	3.0m	3.1m	15.0m
Farebox, Bus	---	0.2m	0.7m	1.5m	2.6m	5.1m
Subtotal, Local	*$ 67.6m*	*$ 69.4m*	*$ 71.6m*	*$ 74.1m*	*$ 76.9m*	*$359.5m*
Federal Formula Funds	---	---	---	0.2m	0.6m	0.8m
State	---	0.3m	0.9m	1.7m	2.4m	5.2m
Total, Revenues	**$ 67.6m**	**$ 69.7m**	**$ 72.6m**	**$ 75.9m**	**$ 79.8m**	**$365.5m**
Expenditures						
Expanded Bus Service						
Bus Services	---	$ 2.7m	$ 8.5m	$ 15.0m	$ 21.8m	$ 48.0m
ADA Services	---	0.1m	0.9m	1.7m	1.9m	4.5m
Subtotal, Expanded Bus Service	---	*$ 2.8m*	*$ 9.3m*	*$ 16.6m*	*$ 23.7m*	*$ 52.5m*
Other						
Support to Existing Services*	$ 2.8m	$ 2.8m	$ 2.9m	$ 2.9m	$ 3.0m	$ 14.4m
Wake TRACS	---	0.0m	0.0m	0.1m	0.1m	0.2m
Transfer to Bus Capital	12.3m	55.0m	7.3m	10.7m	37.3m	122.6m
Transfer to Rail Capital	7.9m	8.2m	76.8m	58.4m	0.9m	152.2m
Debt Service	---	---	---	5.2m	13.9m	19.0m
Subtotal, Other	*$ 23.0m*	*$ 66.1m*	*$ 87.0m*	*$ 77.3m*	*$ 55.2m*	*$308.4m*
Total, Expenditures	**$ 23.0m**	**$ 68.8m**	**$ 96.4m**	**$ 93.9m**	**$ 78.9m**	**$360.9m**
Fund Balance						
Beginning Balance	$ 16.8m	$ 61.5m	$ 62.3m	$ 38.5m	$ 20.5m	---
Change in Fund Balance	+ 44.6m	+ 0.8m	- 23.8m	- 18.0m	+ 1.1m	---
Ending Balance	**$ 61.5m**	**$ 62.3m**	**$ 38.5m**	**$ 20.5m**	**$ 21.6m**	**---**
Rounding was used and may lead to minor discrepancies in totals.						

* Support to existing service represents approximately 50% of County vehicle registration revenues. See question #5 for additional information.

Table 27.4

Bus Capital Funding Schedule – FY10 Base Year Costs plus Inflation (Core Transit Plan)

Use of Funds	**FY14**	**FY15**	**FY16**	**FY17**	**FY18**	**Total**
Bus Vehicles, New	$ 11.9m	$ 11.6m	$ 11.2m	$ 11.5m	$ 13.5m	$ 59.7m
ADA Vehicles, New	0.4m	0.2m	0.2m	0.2m	0.5m	1.5m
Bus Facilities & Infrastructure	16.9m	114.2m	4.7m	11.2m	63.0m	210.0m
Contingencies (5.0%)	1.5m	6.3m	0.8m	1.1m	3.9m	13.6m
Subtotal, Bus Use of Funds	*$ 30.6m*	*$132.3m*	*$ 16.9m*	*$ 24.0m*	*$ 80.9m*	*$284.8m*
Inflation Costs	$ 4.5m	$ 24.8m	$ 3.9m	$ 6.5m	$ 25.6m	$ 65.4m
Total, Use of Funds	**$ 35.1m**	**$157.2m**	**$ 20.8m**	**$ 30.6m**	**$106.5m**	**$350.2m**
Revenues						
Federal	$ 14.1m	$ 62.9m	$ 8.3m	$ 12.2m	$ 42.6m	$140.1m
State	8.8m	39.3m	5.2m	7.6m	26.6m	87.6m
Transfer from Local Operating	12.3m	55.0m	7.3m	10.7m	37.3m	122.6m
Total, Revenues	**$ 35.1m**	**$157.2m**	**$ 20.8m**	**$ 30.6m**	**$106.5m**	**$350.2m**
Rounding was used and may lead to minor discrepancies in totals.						

Table 27.5

Rail Capital Funding Schedule – FY11 Base Year Costs plus Inflation (Core Transit Plan)

Use of Funds	**FY14**	**FY15**	**FY16**	**FY17**	**FY18**	**Total**
Commuter Rail	$ 7.1m	$ 7.1m	$ 63.4m	$100.9m	$106.8m	$285.3m
Light Rail	---	---	---	---	---	---
Grade Separation Reserve	---	---	1.3m	11.8m	---	13.1m
Subtotal, Rail Use of Funds	*$ 7.1m*	*$ 7.1m*	*$64.6m*	*$112.6m*	*$106.8m*	*$298.3m*
Inflation Costs	$ 0.8m	$ 1.1m	$ 12.1m	$ 25.8m	$ 29.1m	$ 68.9m
Total, Use of Funds	**$ 7.8m**	**$ 8.2m**	**$ 76.8m**	**$138.4m**	**$135.9m**	**$367.2m**
Revenues						
Federal	---	---	---	---	---	---
State	---	---	---	---	---	---
Transfer from Local Operating	7.8m	8.1m	76.8m	58.4m	0.9m	152.2m
Debt Service	---	---	---	80.0m	135.0m	215.0m
Total, Revenues	**$ 7.8m**	**$ 8.2m**	**$ 76.8m**	**$138.4m**	**$135.9m**	**$367.2m**
Rounding was used and may lead to minor discrepancies in totals.						

Tables 27.6 through and 27.8 summarize operating revenues and expenditures, and the bus and rail capital programs for the Enhanced Transit Plan.

Table 27.6

Bus and Rail Operating – Based on Year of Revenue/Expenditure (Enhanced Transit Plan)

Revenues	**FY14**	**FY15**	**FY16**	**FY17**	**FY18**	**Total**
Local & Farebox						
Sales Tax, ½ cent	$ 56.7m	$ 58.2m	$ 59.6m	$ 61.1m	$ 62.6m	$298.3m
Vehicle Reg, $3 TT	2.4m	2.4m	2.5m	2.5m	2.6m	12.4m
Vehicle Reg, $7 County*	5.5m	5.7m	5.8m	5.9m	6.0m	28.9m
Vehicle Rental	2.9m	3.0m	3.0m	3.0m	3.1m	15.0m
Farebox, Bus	---	0.2m	0.7m	1.5m	2.6m	5.1m
Farebox, Rail	---	---	---	---	---	---
Subtotal, Local	*$ 67.6m*	*$ 69.4m*	*$ 71.6m*	*$ 74.1m*	*$ 76.9m*	*$359.5m*
Federal Formula Funds	---	---	---	0.2m	0.6m	0.8m
State	---	0.3m	0.9m	1.7m	2.4m	5.2m
Total, Revenues	**$ 67.6m**	**$ 69.7m**	**$ 72.5m**	**$ 76.0m**	**$ 79.9m**	**$365.5m**
Expenditures						
Expanded Bus Service						
Bus Services	---	$ 2.7m	$ 8.5m	$ 15.0m	$ 21.8m	$ 48.0m
ADA Services	---	0.1m	0.9m	1.7m	1.9m	4.5m
Subtotal, Exp Bus Srvc	---	*$ 2.8m*	*$ 9.3m*	*$ 16.6m*	*$ 23.7m*	*$ 52.5m*
Rail Service						
Commuter *(Service begins ~FY20)*	---	---	---	---	---	---
Light Rail *(Service begins ~FY22)*	---	---	---	---	---	---
Other						
Support to Existing Services*	$ 2.8m	$ 2.8m	$ 2.9m	$ 2.9m	$ 3.0m	$ 14.4m
Wake TRACS	---	0.0m	0.0m	0.1m	0.1m	0.2m
Transfer to Bus Capital	12.3m	55.0m	7.3m	10.7m	37.3m	122.6m
Transfer to Rail Capital	4.8m	5.8m	35.4m	71.8m	34.2m	152.0m
Debt Service	---	---	---	---	3.5m	3.5m
Subtotal, Other	*$ 19.9m*	*$ 63.6m*	*$ 45.6m*	*$ 85.5m*	*$ 78.1m*	*$292.7m*
Total, Expenditures	**$ 19.9m**	**$ 66.4m**	**$ 54.9m**	**$102.2m**	**$101.8m**	**$345.2m**
Fund Balance						
Beginning Balance	$ 16.8m	$64.5m	$67.7m	$85.3m	$59.1m	---
Change in Fund Balance	+ 47.7m	+ 3.2m	+ 17.5m	- 26.2m	- 22.0m	---
Ending Balance	**$ 64.5m**	**$67.7m**	**$85.3m**	**$59.1m**	**$37.1m**	**---**
Rounding was used and may lead to minor discrepancies in totals.						

* Support to existing service represents approximately 50% of County vehicle registration revenues. See question #5 for additional information.

Table 27.7

Bus Capital Funding Schedule – FY10 Base Year Costs plus Inflation (Enhanced Transit Plan)

Use of Funds	**FY14**	**FY15**	**FY16**	**FY17**	**FY18**	**Total**
Bus Vehicles, New	$ 11.9m	$ 11.6m	$ 11.2m	$ 11.5m	$ 13.5m	$ 59.7m
ADA Vehicles, New	0.4m	0.2m	0.2m	0.2m	0.5m	1.5m
Bus Facilities & Infrastructure	16.9m	114.2m	4.7m	11.2m	63.0m	210.0m
Contingencies (5.0%)	1.5m	6.3m	0.8m	1.1m	3.9m	13.6m
Subtotal, Bus Use of Funds	*$ 30.6m*	*$132.3m*	*$ 16.9m*	*$ 24.0m*	*$ 80.9m*	*$284.8m*
Inflation Costs	$ 4.5m	$ 24.8m	$ 3.9m	$ 6.5m	$ 25.6m	$ 65.4m
Total, Use of Funds	**$ 35.1m**	**$157.2m**	**$ 20.8m**	**$ 30.6m**	**$106.5m**	**$350.2m**
Revenues						
Federal	$ 14.1m	$ 62.9m	$ 8.3m	$ 12.2m	$ 42.6m	$140.1m
State	8.8m	39.3m	5.2m	7.6m	26.6m	87.6m
Transfer from Local Operating	12.3m	55.0m	7.3m	10.7m	37.3m	122.6m
Total, Revenues	**$ 35.1m**	**$157.2m**	**$ 20.8m**	**$ 30.6m**	**$106.5m**	**$350.2m**
Rounding was used and may lead to minor discrepancies in totals.						

Table 27.8

Rail Capital Funding Schedule – FY11 Base Year Costs plus Inflation (Enhanced Transit Plan)

Use of Funds	**FY14**	**FY15**	**FY16**	**FY17**	**FY18**	**Total**
Commuter Rail	$ 7.1m	$ 7.1m	$ 63.4m	$100.9m	$106.8m	$285.3m
Light Rail	10.2m	13.1m	50.7m	85.7m	173.7m	333.4m
Grade Separation Reserve	---	---	1.3m	11.8m	---	13.1m
Subtotal, Rail Use of Funds	*$ 17.4m*	*$ 20.2m*	*$115.3m*	*$198.4m*	*$280.5m*	*$631.8m*
Inflation Costs	$ 1.9m	$ 3.0m	$ 21.6m	$ 45.5m	$ 76.4m	$148.4m
Total, Use of Funds	**$ 19.3m**	**$23.2m**	**$137.0m**	**$243.8m**	**$356.9m**	**$780.1m**
Revenues						
Federal	$ 9.6m	$ 11.6m	$ 67.7m	$114.7m	$178.4m	$382.0m
State	4.8m	5.8m	33.9m	57.3m	89.2m	191.0m
Transfer from Local Operating	4.8m	5.8m	35.4m	71.8m	34.2m	152.0m
Debt Service	---	---	---	---	55.0m	55.0m
Total, Revenues	**$ 19.3m**	**$23.2m**	**$137.0m**	**$243.8m**	**$356.9m**	**$780.1m**
Rounding in the display of subtotals may lead to minor discrepancies in totals.						

28) What has been TTA's increase in annual average rate of inflation for operating expenses been for the past 10 years? What has it been for capital expenses?

ANSWER: The average increase in operating expenses is driven by levels of service (expansion/ reduction) in any given year. The appropriate measure of level of operational expenses inflation increases year over year is cost per revenue hour. Between 2001 and 2012 the average increase in Triangle Transit's cost per revenue hour was 3.8%.

While Triangle Transit operations have seen cost increases above the currently proposed inflation rate in the Wake County plan for general inflation, Triangle Transit operations costs carry only a minor weight in determining the overall inflation rates in the plan, which are much more driven by international commodity markets such as petroleum, concrete and steel. With this in mind, our financial consultants have recommended using inflation projections from the Congressional Budget Office (CBO) plus an additional 0.8% cushion for increased conservatism in the long term. The CBO's inflation estimates for FY 2012 was 1.2% and 1.3% in FY 2013. The revised draft of the Wake County Transit Plan (dated September 25, 2012) uses an average operating inflation rate of 2.5%.

Capital expenditures are primarily driven by vehicle purchases which are acquired via a State of North Carolina contract. Triangle Transit follows federal guidelines for vehicle replacement and disposal based on useful life and/or mileage. The majority of our bus fleet is comprised of 35 and 40 foot Gillig's. After an initial purchase of 35 foot vehicles in 2008 all subsequent purchases have been 40 foot buses. The average purchase price of the 40 foot Gillig's increased by 6.3% between 2009 and 2010 and by 6.7% between 2010 and 2011.

Table 28.1
Average Price of Triangle Transit Bus Capital

Fiscal Year	Bus Length	Average Price	Percent Change
2008	35ft Gillig's	$ 327,690	---
2009	40ft	$ 341,824	4.3%
2010	40ft	$ 363,208	6.3%
2011	40ft	$ 387,574	6.7%